The Hunterian Lecture

ON

THROMBOSIS AND EMBOLISM AFTER OPERATIONS ON THE FEMALE PELVIC ORGANS.

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GENTLEMEN,—Interest in the clotting or coagulation of the blood when withdrawn from the living body begins in childhood; this phenomenon may be included among our earliest experiences of what, in John Hunter's day, was called the animal economy. It is a subject to which Hunter gave much time and thought, as may be gathered from a perusal of his well-known "Treatise on the Blood," published in 1792.

The literature relating to coagulation of the blood has become overwhelming but in spite of this the real factors in the production of fibrin remain undetected. The prevailing theory is that founded on experiment by O. Schmidt (1861) who isolated from blood a substance termed fibrinogen which in the presence of paraglobulin (fibrinoplastin), with the assistance of a hypothetical fibrin ferment, is able to form fibrin, the structureless substance which is the concrete element in blood clot. Modern physiological investigation has busied itself to find out the source of the mysterious something which brings about this rapid formation of fibrin in the blood. Coagulation of the blood is certainly a complex reaction and the presence of calcium salts has been proved to be essential. There is good reason to believe that the white corpuscles are the causative agents and Foster suggests that the destructive explosion of these corpuscles when blood is withdrawn from the vessels leads to the formation of fibrin. The part played by the platelets remains an enigma.

In this lecture, however, we are concerned with thrombosis or the coagulation of blood within the heart and blood-vessels during life. It must certainly have occurred to every thoughtful person to ask, Why does the blood persist as a fluid in these vessels in living animals? This question has never been satisfactorily answered.

From the histological point of view the blood is regarded as a fluid tissue of which the plasma serves for a matrix and the familiar red and white corpuscles as the cellular elements. The chief function of the blood is to nourish the tissues with which it comes in contact and receive from them waste products. In order to do this effectively it is enabled, by a remarkable mechanism termed the "circulation of the blood," to traverse multitudinous canals furnished with a peculiar lining called endothelium. These canals are known collectively as the blood-vessels. The particular value of the endothelium in the cavities of the heart and blood-vessels has been made the subject of much careful research. It is clear that this cellular lining is not only an essential element of a blood-vessel but it is in some way very closely concerned in maintaining the fluidity of the blood; indeed, Cohnheim states *that the blood remains fluid in the vessels as long as the endothelium is intact and performs its functions normally.* Subsequent investigators are unanimous in the belief that the endothelium exercises a great influence in maintaining the fluidity of the blood whilst circulating in the vessels; and at least one physiologist is of opinion that endothelium should be regarded as a corpuscular element of the blood. The integrity of the endothelium is often disturbed by disease but more frequently as the result of injury, including surgical operations in this category. The influence of surgical operations in producing thrombosis, and the disasters which arise in consequence, will be discussed in this lecture.

The circulation of the blood had been discovered some 250 years and the occurrence of obstructing clot in the big veins and arteries, as well as the formation of coagula in the cavities of the heart, are conditions which had been long known to physicians, surgeons, and morbid anatomists before it occurred to an observer that many of the clots detected in arteries, and especially in the afferent vessels of the lungs, do not arise in the vessels which they occupy after death, but were brought from a distance by the blood current. This transport of clots "through the natural gates and alleys of the body" is known as embolism; and for a knowledge of this important matter we are mainly indebted to the observations and experiments of Virchow.

The early investigators of the causes of thrombosis attributed it to mechanical disturbances of the circulation, alterations in the blood, or lesions of the endothelium lining the walls of blood-vessels and the chambers of the heart. It has been proved that the mere application of an aseptic ligature to a blood-vessel is not sufficient to establish thrombosis. Thanks to Lister's epoch-making researches into the cause of pyæmia, we now realise that intravascular clotting of the blood is due to the action of pathogenic micro-organisms and the toxins which they brew. Although it is true that micro-organisms may enter the blood through the lymph vessels, it is undeniable that veins are the chief channels by which the blood is invaded. The small veins near the infected area are denuded of endothelium and filled with thrombi containing bacteria; the clot extending into the larger veins becomes softened by the micro-organisms exactly as bacteria liquefy culture media; portions are detached by the blood stream and carried away as septic emboli to lodge in distant organs and establish secondary septic foci.

My main object in this lecture is to consider more particularly the mode of origin of those clots of blood which are big enough when detached from the veins in which they are formed to plug or occlude the pulmonary artery with fatal effect. Occlusion of the pulmonary artery in this way occurs occasionally as a sequence to almost every kind of surgical operation, and though it is a well-recognised source of danger after parturition, it happens more frequently as a sequel to abdominal operations than under any other condition. When we analyse the circumstances predisposing to this accident it will be found in the majority of cases that sepsis is the prevailing cause. In relation to the jugular system of veins the part played by infective diseases of the middle ear in producing thrombosis of the lateral sinus which will extend to the jugular bulb and onwards is well known. It is a matter of common observation that large veins may be thrombosed and the patient recover, although bacteriological examination of the blood proves that it has been for a time colonised by micro-organisms. The observations of Metchnikoff on phagocytosis show that the corpuscular elements of the blood can effectively deal with an invasion of bacteria and that the final consequences to the individual depend not only on the virulence but also on the dose of the invading micro-organism.

It is also necessary for us to appreciate the fact that thrombosis is in reality a defensive action of the blood. This was shown by M. B. Schmidt in regard to the invasion of the blood by cancer particles. Cancer cells enter the blood-stream by implicating veins or by way of the lymphatics. The behaviour of the blood to cancerous particles is remarkable; when the cells enter the blood they excite thrombosis and the thrombus contracts upon the cancer cells and may ultimately destroy them (Fig. 1). This defending or prophylactic power of the blood is very important as it prevents the blood-stream from being colonised.

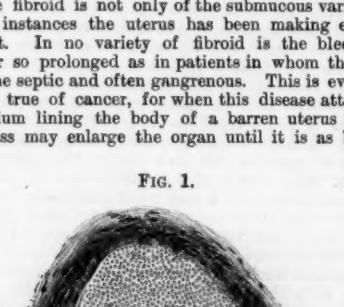
It is, I know, often stated that cancer cells establish thrombosis when they effect an entrance into the circulation. This statement requires consideration. When a cancerous patient has arrived at that stage in the disease when thrombosis may be expected, the primary tumour is invariably septic and the majority of these patients die from septic infections. It is a fact that in the late stages of cancer the bud-like processes from the ulcerating focus which invade the veins contain pathogenic micro-organisms, and when a fragment enters the blood-stream, the thrombus which forms around it is the result of these minute bodies or their toxins.

When a large outrunner from a malignant non-ulcerated and non-infected tumour of the kidney fills the renal vein and projects into the vena cava it does not become coated with coagulated blood. I have made many observations of this kind.

It is an established fact that pulmonary embolism is fairly

common after hysterectomy for fibroids and for uterine cancer. This is often attributed to altered conditions of the blood as a consequence of the profound anæmia which is produced by the profuse menorrhagia associated with submucous fibroids. When we come to analyse the matter we shall find that sepsis plays a very important part here also. It is now admitted that the very profuse losses of blood associated with uterine fibroids occur chiefly in women in whom the fibroid is not only of the submucous variety, but in many instances the uterus has been making efforts to extrude it. In no variety of fibroid is the bleeding so profuse or so prolonged as in patients in whom the fibroid has become septic and often gangrenous. This is even more positively true of cancer, for when this disease attacks the endometrium lining the body of a barren uterus the cancerous mass may enlarge the organ until it is as big as a

FIG. 1.



A cancerous embolus in a pulmonary capillary imbedded in a thrombus (after Schmidt).

small cocoa-nut without causing hæmorrhage, but as soon as the mouth of the uterus becomes dilated micro-organisms gain access to the new growth, then sloughing, attended with a free loss of blood, is quickly established.

When I began to collect the material for this lecture my chief object was to find out the causes of thrombosis besides sepsis. It is true that pathologists divide emboli into two sets, toxic, or septic emboli, and bland, or aseptic emboli; but a study of the conditions underlying the formation of thrombi in the great veins after pelvic operations convinces me that sepsis is responsible for all. In some instances it is true that the sepsis is of a mild type and leads to the formation of thrombi which are not colonised with bacilli. I have had such clots carefully examined bacteriologically with negative results, yet there has been evidence in the clinical records of acceleration of the pulse, fever, and exudation.

The lodgment of small septic emboli in the lungs after surgical operations, especially those performed for suppurative appendicitis and inflammatory affections of the gall-bladder, is a subject worth closer attention than it has yet received, for many examples of post-operative pneumonia, usually attributed to ether and chloroform, are really caused by minute septic pulmonary emboli. After all forms of operations on the pelvic organs, including those performed for inguinal and femoral hernia, thrombosis occasionally occurs in the iliac, femoral, and saphena veins. It is only necessary to read periodical surgical and gynæcological literature of all countries to find frequent references to this matter; in nearly all statistical tables of any importance relating to pelvic operations statements are made in reference to the percentage of cases in which thrombosis was recorded in the clinical notes.

I have given careful attention to the subject and find that post-operative thrombosis is usually noticed about the twelfth day and its occurrence is intimated by fever, pain in the thigh, quickened pulse, and swelling of the limb. When the signs and history of the cases are carefully considered they will be seen to form three groups: in one the saphena vein is involved; in another the femoral and iliacs; and in the third the ovarian vein. Each group gives rise to a fairly distinctive set of signs and symptoms.

The first group, that in which the thrombosis is limited to the saphena vein, includes the simplest conditions; the patient complains of pain in the groin and along the front of the thigh; often there are pain and tenderness confined to the calf. In either condition the tenderness is in the course of the vein. These signs are accompanied by acceleration of the pulse and some fever. As a rule, in this group the symptoms subside in 10 or 14 days.

Post-operative thrombosis of the saphena vein is, according to my observations, usually due to infection from the abdominal incision, and the route of infection is the superficial epigastric veins which open into it near its termination in the femoral vein. I came to this opinion some years ago by noticing two or three instances in which the saphena vein became thrombosed when the patient had been submitted to an exploratory cœliotomy; in these patients the pelvic organs were examined but not otherwise interfered with. I also saw this complication follow on two or three occasions a simple ventrofixation of the uterus. This led me to study further the influence of the abdominal incision in producing thrombosis of the long saphena vein, and I have reluctantly come to the conclusion that the prime factors in producing the changes in the wound which induce thrombosis in this vein are buried sutures, whether they be silk or catgut. I have made a series of observations on this matter by closing a number of median incisions by means of buried silk sutures and also a series of cases with through-and-through sutures. However carefully the silk is prepared, and with whatever precautions the sutures are inserted with the hands covered with rubber gloves sterilised by being boiled 20 minutes, now and then a buried suture will give trouble; even in cases in which the buried silk sutures apparently settle down without disturbance there are often trifling rises of temperature which are not encountered when the simple through-and-through method of suture is employed. Moreover, I have discussed this matter with some surgeons who habitually employ catgut for buried sutures and they candidly express the opinion that the absorption of the catgut leads to elevations of temperature. There is another serious matter associated with the employment of catgut for buried sutures: during the period of its softening the bonds of union between the apposed surfaces of the incision become softened, and any undue exertion on the part of the patient, such as coughing or straining, will cause them to separate and permit protrusion of the intestine. This is a serious matter, for Madelung in a valuable contribution has shown that a large proportion of the patients in whom this accident happens die in consequence. He also points out that this serious post-operation calamity occurs most frequently in the practice of those surgeons who use catgut sutures for bringing together the middle layer of the abdominal incision. On one occasion I had to reopen an abdomen ten days after an operation had been performed by another surgeon who had closed the middle layer with catgut sutures. The strands of catgut were swollen, soft, and looked like pieces of vermicelli which had been soaked in water.

In connexion with the relation between buried sutures and thrombosis some evidence is furnished by the occurrence of fatal pulmonary embolism after operations for the radical cure of inguinal hernia. Somerville Hastings collected the fatal cases of pulmonary embolism after surgical operations which occurred in the Middlesex Hospital between 1900 and 1905, both years inclusive. There were 14 cases, and of these four occurred after operations for the radical cure of hernia. In two of the patients the sources of the emboli were not found, in two the internal iliac veins contained thrombi. The operations in these cases were not performed with gloved hands.

The occurrence of pulmonary embolism as a sequel to operations for the radical cure of hernia is of importance in relation to my contention that the buried sutures are in a measure responsible for it, as this is an operation in which this kind of suture is considered to be of primary importance in closing the external inguinal opening. A careful study of

the clinical history of a long list of consecutive cases shows that the healing is not always ideal and the "buried suture" is associated with many suppurating sinuses.

When thrombosis occurs in the iliac and femoral veins after hysterectomy or ovariotomy, this, as a rule, indicates that the infection proceeds from the vessels about the stump, especially the uterine veins. When the clot blocks up the external iliac and femoral veins it leads to solid œdema of the thigh which gradually extends to the leg. Apart from the danger which ensues from the detachment of a fragment of clot and its arrest in the pulmonary artery, this complication is often a serious matter for the patient, as it entails a long confinement to bed, a tedious convalescence, and the œdema will persist for many months and occasionally impair the circulation in the limb for several years, in spite of topical applications, careful bandaging, or judicious massage.

It is possible that in some instances thrombosis arising in the saphena vein may extend into the femoral and iliac veins, but as a rule the formation of clot in the saphena vein stops at the valves which guard its junction with the femoral vein.

THROMBOSIS OF THE OVARIAN VEINS.

The ovarian veins not only carry away the venous blood from the ovaries and adjacent tissues, but they have important communications with the uterine veins; in septic infections of the uterus infective material finds its way into the ovarian veins, as well as into the iliac veins, and we have to realise that thrombosis of the ovarian veins is a sequence to uterine sepsis. These veins also become thrombosed as a sequel to hysterectomy and a very striking and instructive example of this has been recorded by Dr. T. G. Stevens. A woman died 11 days after a subtotal hysterectomy for fibroids; the symptoms were those of subacute septicæmia. Stevens found at the post-mortem examination that the right ovarian vein was thrombosed from the point where it was ligatured in the pelvis to its entrance into the vena cava. He isolated from the clot in the vein and produced in culture the bacillus pyocaneus. Stevens also makes the pertinent statement that "the vein could have been easily dissected out and possibly the fatal result might have been averted."

The fact that bacilli were isolated from the thrombus in the vein is important because it indicates that when these micro-organisms soften the clot small pieces are detached and discharged with the bacilli they contain into the circulation and produce the oft-recurring rigors which is such a striking clinical feature of general septic infection supervening upon uterine operations and delivery. The thrombosis of the ovarian veins also serves to explain the failure of certain surgical measures designed for the relief of acute septic infection (puerperal) of the uterus. In this desperate condition efforts have been made to save the patients by removing the uterus either by the abdominal or the vaginal route, but with no encouraging measure of success. In a few instances patients have recovered after hysterectomy and it is possible that vaginal hysterectomy may now and then be a wise operation in acute puerperal infection, although under such conditions, if the uterus be removed, the ovarian veins remain plugged with septic clot which furnishes infected particles to be discharged into the general circulation, although the primary focus of infection has been removed.

The first successful step towards improving the surgical treatment of these conditions we owe to Trendelenburg. This surgeon published in 1902 a paper in which he reviews in an able manner the pathological and anatomical conditions associated with puerperal sepsis and the part played by the internal iliac veins and the ovarian veins in disseminating the septic material. He conceived the idea of preventing the spread of infection from the uterus into the general circulation by ligaturing these veins. The patients on whom he first tried this method died, they came under his care too late; but in 1901 a woman with typical puerperal pyæmia supervening on a miscarriage was saved in the following way. Cœliotomy was performed but it was then found preferable to drain by the vagina. She improved for a time and then the rigors recurred and Trendelenburg ligatured the right internal iliac vein. Again there was a relapse and to meet this he ligatured and resected five centimetres of the right ovarian vein. This woman finally recovered in spite of a metastatic abscess which formed on the shoulder. The infecting micro-organism was a streptococcus. Since the publication of Trendelenburg's paper some brilliantly successful results have been published by other surgeons, including Michels, Bumm, Cuff, and Lendon. In some of the patients it was possible to feel the thrombosed ovarian vein through the abdominal wall.

The ovarian vein can be readily exposed through an incision in the anterior abdominal wall running from the tip of the eleventh rib to the spine of the pubes parallel with Poupart's ligament; the muscles are divided and the peritoneum is exposed (but not opened) and gently reflected until the ovarian vein is exposed; the vein is then carefully separated from the ureter; about two centimetres below its junction with the vena cava or the renal vein, as the case may be, it is securely ligatured and divided. The lower section of the vein is isolated towards the pelvis and securely ligatured; the intermediate section is then cut away. The margins of the wound, including the cut edges of the muscles, are united with interrupted sutures and the space may be drained with gauze or rubber tubing. When the operation is conducted in this way it is extraperitoneal. In some instances the thrombosed ovarian veins have been successfully tied through the usual median incision into the peritoneal cavity. In some instances the surgeons have contented themselves by tying the vein and then splitting it up and turning out the clot. The extraperitoneal operation is not difficult as the parietal tissues are stretched and the connective tissue is softened by the pregnancy. The object of tying the veins is to prevent the conveyance of clot with the pathogenic micro-organisms it contains entering the circulation, thereby setting up, among other things, endocarditis and pulmonary embolism. One of the difficulties in the operation is in coming to a decision whether one, or both, of the ovarian veins should be dealt with.

I carried out Trendelenburg measures in a case of acute puerperal sepsis (or metastatic bacteriæmia) and although the procedure was not followed with success the clinical course proved to be of interest. 12 days after a miscarriage the patient, a woman 35 years of age, mother of two children, was seized with fever accompanied by rigors, rapid pulse, and abdominal distension. The uterus was curetted and some fragments of placenta were removed; the fever and rigors continued. 48 hours after the curetting she was seized with signs of pulmonary embolism. I saw the patient in consultation with the medical attendant and had her removed to the Middlesex Hospital. There were physical signs of effusion into the right mesometrium and she was tender along the course of the right ovarian vein. I exposed the right ovarian vein extraperitoneally; it was as thick as my thumb but contained no clot; I exsected three inches of the vein. I then exposed the left ovarian vein in the same way; it appeared normal and was simply ligatured. Fearing there might be pus in the pelvis I made a small median opening immediately above the pubes, introduced a drain tube into the pelvis, and evacuated some ounces of turbid exudation. The immediate results of the operation were excellent. The rigors ceased and the respiratory struggle diminished. For a few days matters looked hopeful, then the temperature rose again, and on the eighth day respiratory difficulty recommenced and the patient died somewhat suddenly. At the post-mortem examination the right common and internal iliac veins contained thrombi, and a large thrombus with a rounded apex, as if it had been flushed with the blood current, occupied the right auricular cavity; a thrombus occupied but did not occlude the pulmonary artery, and an embolus of some standing was found in a branch of the pulmonary artery in the lower lobe of each lung.

The thrombi were examined bacteriologically. Bacillus pyocyaneus and streptococcus were isolated from the clots found in the iliac vein, and a streptococcus was found in the blood from the heart.

The great difficulty in dealing with this condition is the selection of suitable cases. Experience teaches that acute cases are unsuitable. The best results have been attained in the chronic forms of the disease where the thrombosis was limited. There is great uncertainty in a given case as to the extent of the thrombosis and the number of veins implicated. As has already been mentioned, there are two routes for gaining access to the thrombosed vessels—the extraperitoneal and the intraperitoneal. From the experience gained in my case I should in future prefer the intraperitoneal route

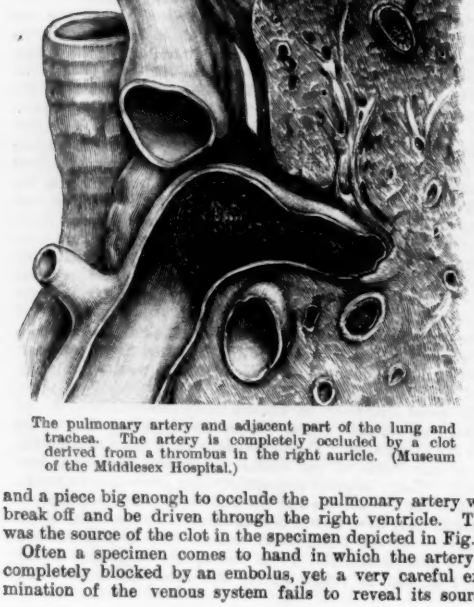
(cœliotomy), for it enables the surgeon to deal with the vessels, iliac or ovarian, of both sides as well as allowing a thorough examination of the pelvic organs, and it permits the drainage of any collection of serum or pus found in the pelvis. From a study of the reported cases it is clear that the best results are obtained by cœliotomy. The ligature of thrombosed ovarian veins in chronic puerperal pyæmia promises good results for the future, but it needs further experience to teach us the kind of case in which it is likely to be successful.

EMBOLISM OF THE PULMONARY ARTERY.

Before considering embolism of the pulmonary artery in detail it is necessary to point out that the pelvis contains two potential reservoirs of blood clot; these are the iliac veins and the ovarian veins. There is also another set of veins in the abdomen which needs careful consideration in regard to thrombosis and embolism after surgical operations; these are the radicles of the azygous system of veins which finally debouch into the superior vena cava. The occurrence of fatal pulmonary embolism after operations for suppurative appendicitis is by no means uncommon. Every big list of operations on the gall-bladder and its ducts contains cases of sudden death due to the same cause, and this tragic mode of death occurs occasionally after nephropexy, but is rare indeed after nephrectomy. The azygous vein is probably the route taken by the fatal embolus after operations in the cæcal, renal, and gall-bladder regions.

In considering the mechanics of the occlusion of the pulmonary artery by an embolus there are a few points worth consideration. In the first place, this vessel is peculiar in the fact that it has the structure of an artery, yet it conveys venous blood to the lung, and, considered as an artery, it has a greater diameter than any other artery in the body, for its average cross measurement is 30 millimetres, whilst that of the aorta immediately above the sinuses is given as 28 millimetres; it is obvious that it requires a large piece of clot to plug it effectually. An embolus which will completely plug this artery comes, as a rule, from such vessels as the superior and inferior vena cava or from the right auricular cavity. A thrombus may form in the superior cava and extend into the auricular cavity, or a large clot will arise in the chamber of the auricle primarily

FIG. 2.

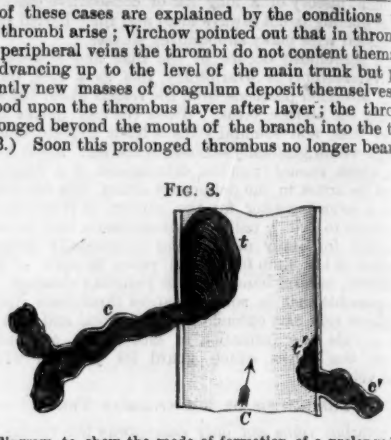


The pulmonary artery and adjacent part of the lung and trachea. The artery is completely occluded by a clot derived from a thrombus in the right auricle. (Museum of the Middlesex Hospital.)

and a piece big enough to occlude the pulmonary artery will break off and be driven through the right ventricle. This was the source of the clot in the specimen depicted in Fig. 2.

Often a specimen comes to hand in which the artery is completely blocked by an embolus, yet a very careful examination of the venous system fails to reveal its source. Some of these cases are explained by the conditions under which thrombi arise; Virchow pointed out that in thrombosis of the peripheral veins the thrombi do not content themselves with advancing up to the level of the main trunk but pretty constantly new masses of coagulum deposit themselves from the blood upon the thrombus layer after layer; the thrombus is prolonged beyond the mouth of the branch into the trunk. (Fig. 3.) Soon this prolonged thrombus no longer bears any

FIG. 3.

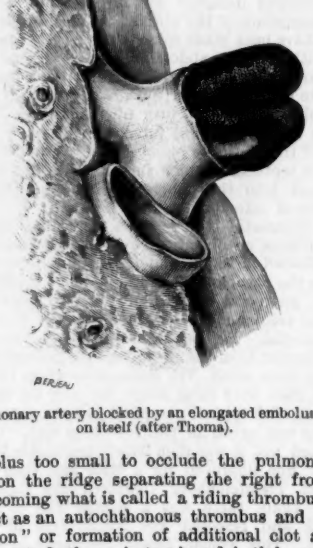


A diagram to show the mode of formation of a prolonged thrombus (after Virchow). C, portion of a vein laid open. *c* and *c'*, veins plugged with clot. *t*, prolonged thrombus. *t'*, a clot from which a prolonged thrombus has been detached.

proportion to the original thrombus from which it proceeded. The prolonged thrombus may have the thickness of a thumb, the original one that of a knitting-needle. From a lumbar vein, for example, a plug may extend into the vena cava as thick as the last phalanx of the thumb. The detached head of the thrombus may be broken off, transported to the pulmonary artery, destroy the patient's life, and leave so little evidence as to its origin that the most painstaking dissection after death will be fruitless.

There is another way in which these propagating thrombi, as they are called, behave. Instead of the knob of the thrombus being detached the entire clot will slip out of the venule in which it was formed; when such an elongated thrombus is examined it appears too thin to obstruct a big vessel like the pulmonary artery, but when it reaches this vessel and is doubled up by the blood stream it serves as an effective plug. (Fig. 4.)

FIG. 4.



The pulmonary artery blocked by an elongated embolus doubled on itself (after Thoma).

An embolus too small to occlude the pulmonary artery may lodge on the ridge separating the right from the left branch, becoming what is called a riding thrombus. Such a clot may act as an autochthonous thrombus and induce the "propagation" or formation of additional clot as will fill and fatally occlude the main trunk and both branches of the pulmonary artery as well as many of its subdivisions in the lung. This rapid thrombosis around an embolus is an

interesting matter and is capable of explanation from experimental data. I have already stated that our conception of the coagulation of the blood is based upon the researches of A. Schmidt, who attributes the formation of fibrin to the action of a hypothetical substance—fibrin ferment—on fibrinogen. Schmidt also discovered that during coagulation a considerable amount of fibrin ferment is set free in the blood, so that blood in which coagulation has already taken place is rich in this substance. Köhler, taking advantage of this fact, devised an important experiment which is thus described by Cohnheim: "Ten or twelve cubic centimetres of blood are taken from the artery of a rabbit, and allowed to clot into a solid cake; as soon as drops of serum appear on the surface the clot is cut up and the liquid expressed through a linen cloth. The fluid thus obtained is filtered, and about 5 or 6 c.c. are slowly and cautiously injected into the jugular vein of the animal from which it was withdrawn. As a rule, before the last drops have been injected there suddenly arises the characteristic opisthotonos: the pupils dilate wildly; the animal gasping for air makes forced movements with mouth and nose; the heart labours powerfully, forcibly shaking the wall of the thorax—in short, we have the well-known and unmistakable picture of fatal pulmonary embolism. On rapidly opening the thorax as soon as the cornea has become insensible and paralysis of all the muscles has announced the animal's death, the right heart, which still pulsates, will be found full of tenacious matted clot and all the branches of the pulmonary artery packed with red thrombi."

This experiment indicates that a propagating thrombus may be due to the presence in the clot of fibrin ferment, which directly reacts on the blood which bathes it. A transported clot or thrombus would have the same effect. At any rate, the experiment demonstrates that when a thrombus is formed it contains the active element for producing more fibrin from the blood with which it comes in contact. This element may be the hypothetical fibrin-ferment, or, with more probability, the micro-organisms, or the toxin produced by them, which caused the primary thrombosis.

The symptoms of pulmonary embolism.—The most constant symptoms of the occlusion of the pulmonary artery by an embolus are sudden urgent dyspnœa, great pain in the chest accompanied by agony and fear of death. "Particularly striking is the contrast between the violence of the dyspnœa and the freedom with which the air enters the lungs, and in the absence of pulmonary physical signs" (Welch). As a rule the face is blue and covered with cold sweat. Death may follow in a few minutes or it may be delayed several hours. The patient remains conscious but suffers severe mental distress. On one occasion I saw a woman within ten minutes of the lodgment of an embolus in the pulmonary artery; she was livid and unconscious, and although she had ceased to breathe her heart continued to beat regularly and forcibly for five minutes after my arrival, then stopped suddenly. Occasionally a patient may rally after the most urgent symptoms, then later an extending thrombus or a fresh embolus will cause death. Recovery may occur even in very desperate cases.

One of the most striking facts in connexion with the clinical features of pulmonary embolism after operations is its suddenness and unexpectedness. Certainly, when a woman develops an obvious thrombosis of the femoral vein during convalescence from ovariotomy or hysterectomy, we know that she runs a risk of a piece of the thrombus being detatched and transported to the lungs, but it is an unusual event in patients with an obvious thrombosis. The most tragic cases are those in which there is no suspicion of the existence of clot in the veins.

Some years ago I performed ovariotomy on a patient in whom the tumour had undergone axial-rotation; the pedicle was tightly twisted and the operation was very simple. On the ninth day I removed the sutures and left the patient propped up in bed interested in an illustrated paper, bright and happy. Ten minutes later she was seized with sudden pain in the chest and died almost instantly. I saw her within ten minutes of the attacks and death had occurred so quickly that she had scarcely moved from the position in which I had left her.

When pulmonary embolism occurs as a sequel to an operation it may happen at any time from the hour of the operation and as late as the thirtieth day. In the majority of instances it takes place about the twelfth day. The suddenness with which it supervenes is illustrated by the following cases, in addition to the one just detailed.

A patient was attacked "whilst putting on her clothes to leave the hospital." She died in 12 hours. (Withrow.)

A woman apparently convalescent after hysterectomy was quitting the hospital; she fell dead in the courtyard from pulmonary embolism. (Reclus.)

A woman, 56 years of age, underwent hysterectomy for cancer of the uterus. Four weeks after the operation when preparing to go home she "suddenly dropped to the floor whilst crossing the room, gasped for breath, and was dead in 30 minutes." (Bartlett and Thompson.)

In one remarkable instance a patient complained of sciatic pains 15 days after vaginal hysterectomy. In order to afford relief the surgeon flexed the patient's thigh on her abdomen and then suddenly extended it; this dislodged a clot and the woman was seized with the symptoms of pulmonary embolism and died in 47 minutes. The pulmonary artery was found to be occluded with clot at the post-mortem examination and the ovarian vein contained a thrombus. (Byron Robinson.)

These cases illustrate what most clinical observers have noticed in recording fatal cases of pulmonary embolism—namely, that the detachment and transit of the clot are usually preceded by movement; for example, getting out of bed for the first time after the operation; even sitting up in bed; but more particularly straining during defæcation. It is of great importance to appreciate this fact because it has been suggested that the practice of keeping patients strictly confined to bed for two or three weeks after hysterectomy and allied operations is responsible for the thrombosis which is the source of the fatal emboli. Some American surgeons act on this suggestion and insist on their patients getting out of bed a few days after such operations. This method does not commend itself to British surgeons. In my own practice I make it a rule, even in the most favourable conditions, to keep the patient confined to bed for two weeks. No patient is allowed to get up until her temperature has been normal for at least three days.

The operative treatment of pulmonary embolism.—The fact that the lodgment of an embolus even of large size in the pulmonary artery does not always terminate life in a few minutes led Trendelenburg to attempt its extraction by operation. After careful consideration of the matter he carried out the following operation.

A woman, 63 years of age, was seized with the signs of pulmonary embolism, and Trendelenburg raised an osteoplastic flap on the left side of the thorax, exposed the conus arteriosus, and intended to withdraw the clot through a slit in its walls by means of a specially constructed pump. The patient died from excessive bleeding before the clot could be extracted. The operation was hindered by an adherent pericardium.

Trendelenburg has carried out this operation on a man 45 years of age. This patient was tabetic and sustained a spontaneous fracture of the femur. One month later he was seized with urgent dyspnœa and signs clearly indicating the lodgment of an embolus in the pulmonary artery. Trendelenburg exposed the heart, opened the pulmonary artery, and by means of polypus forceps succeeded in withdrawing 34 centimetres of clot. The incision in the artery was carefully closed with sutures. The man improved considerably as the result of the operation but died 37 hours later. At the post-mortem examination the left and right branches of the pulmonary artery contained an embolus. From the surgical point of view there are no reasons why such a bold example should not be repeated with success.

Since Farina's historic operation (1896) of suturing a stab wound of the right ventricle of the heart more than a hundred similar cases have been reported in which surgeons have exposed the heart and sutured wounds of various kinds in the ventricular walls; indeed, the practice is now so well established that the text-books of surgery contain instructions as to the best methods of dealing with such injuries. Although it is true that many of the patients succumb to hæmorrhage, broncho-pneumonia, pericarditis, empyæma, sepsis, pleurisy, or pneumothorax, nevertheless the published statistics indicate that more than a third of the patients have recovered as a result of such operations. In 1906 as many as 102 reported cases of cardiorrhaphy had been collected by C. H. Frazier, of which number 62 patients died and 40 recovered.

In connexion with stab wounds of the heart it may be mentioned that wounds of the auricle are more fatal than those of the ventricle and wounds of the right ventricle are more fatal than those inflicted on the left.

PULMONARY EMBOLISM AFTER HYSTERECTOMY FOR FIBROIDS.

Pulmonary embolism occurs much more frequently after abdominal hysterectomy for fibroids than after any other operation and is especially liable to happen in women who are profoundly anæmic from profuse and prolonged menorrhagia due to the presence of a submucous fibroid.

In order to afford some notion of the relative liability of patients to this accident after subtotal and total hysterectomy I have gathered the following statistics, which are interesting as showing an extraordinary variation in the practice of different operators.

Baldy ascertained that among 366 operations for fibroids in the Gynecean Hospital, Philadelphia, there were 13 sudden deaths attributed to embolism.

Spencer in 85 total hysterectomies for fibroids lost two patients from pulmonary embolism.

R. Lyle in eight subtotal hysterectomies had one sudden death. Chas. P. Noble in 42 vaginal myomectomies lost two patients—one from septic endocarditis, the other from embolism. In the latter case the fibroid was gangrenous.

In the Middlesex Hospital between the years 1896 and 1906, both years inclusive, there were 212 abdominal hysterectomies performed for fibroids, and three of the patients died from pulmonary embolism. In each instance the occluding plug in the pulmonary artery was demonstrated post mortem. It is also worth note that another woman with a uterine fibroid was waiting in the ward for operation when she died suddenly from pulmonary embolism: the cause of death was demonstrated post mortem. The left common and internal iliac veins contained thrombi.

Olshausen from the year 1894 to the end of 1905 performed 366 hysterectomies for fibroids; five of these patients died from embolism.

Bartlett and Thompson published records of 22 post-mortem examinations of patients dying from pulmonary embolism at the Boston City Hospital. Four of the patients had undergone hysterectomy; two for fibroids and two for carcinoma uteri.

Since 1894 I have performed more than 1000 operations of various kinds for fibroids and have lost one patient from pulmonary embolism. This happened in 1900. The patient was 45 years of age and profoundly anæmic from profuse, prolonged, and long-standing menorrhagia. 12 days after subtotal hysterectomy she asked to be pillowed up in bed; this was done, when she suddenly slipped down the bed in agony and died in 15 minutes. At the post-mortem examination the right pulmonary artery was found plugged with a thick clot; its origin was not detected.

Probably no amount of care will absolutely abolish the liability of patients to pulmonary embolism after pelvic and abdominal operations, but the thrombosis, which is not only a serious complication in itself but the forerunner of the graver embolism, is often due to inefficiency in the means taken to procure asepsis. It is a misnomer to speak of the "uncontrollable embolus," but it behoves surgeons to give the most painstaking care to the preparation of ligature material and to guard their hands, after thorough washing, with sterilised rubber gloves when performing pelvic operations.

To my mind the greatest step in the advance of asepsis in operative surgery is the appreciation of the fact that the skin of the surgeon's hands is one of the chief infecting agencies which patients risk when they submit to a surgical operation. It is a fact that soap and water aided by antiseptics are incompetent to render the skin of the hands free from pathogenic micro-organisms. Certainly the chief cause of post-operative thrombosis and embolism is sepsis.

LECTURES IN LEGAL PSYCHOLOGY.—The second international course for legal psychology and psychiatry will be held at Giessen (Grand Duchy of Hesse), Germany, from April 13th to 18th. The course will be under the direction of Professor Sommer with the coöperation of Professor Mittermaier and Professor Dannemann of Giessen and Professor Aschaffenburg of Cologne. All communications should be addressed to Dr. Sommer, professor of psychiatry, University of Giessen.

ON A COMBINATION OF SUBSTANCES WHICH EXCITES AMŒBOID MOVEMENT IN LEUCOCYTES, BY WHICH LIVING CAN BE DIFFERENTIATED FROM DEAD CELLS.

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SINCE 1905 I have been engaged in investigations concerning the life of leucocytes after removal from the body. My endeavour has been to construct a method of measuring their lives in order that comparative measurements may be made when the cells are bathed in the plasma of different persons. My object is to demonstrate the effect, if any, of the plasma of a person suffering from an infective disease on the life of a healthy person's leucocytes; and, again, the effect of the same plasma on the life of leucocytes of another person suffering from the same disease.

It was necessary in the first instance to be able to differentiate living from dead leucocytes, and to do this I made some researches into their cytology. These have recently been published in the *Journal of Physiology* (1 and 2).* The experiments employed consisted mainly of the examination of blood cells when they were resting on agar jelly which contained, besides sodium citrate and sodium chloride, some Unna's stain, and the main conclusions arrived at were that the cytoplasm of living leucocytes is of jelly-like consistency, that it liquefies at death, and that diffusion of stain into the living cells is hastened by heat and alkalies and delayed by neutral salts.

During these experiments it was found necessary to add different substances to the agar, so as to test their effect on the cells. On one occasion, about two years ago, sulphate of atropine was added to the stained agar, so as to kill the leucocytes, in order to compare their appearance with that of living leucocytes. Instead of killing them, however, it was found that atropine stimulated them to great activity and it was at once seen that this stimulation, if constant, would constitute a method of differentiating living from dead leucocytes, whereby the required measurements of their lives could be made.

This paper describes further investigation into this stimulation of amœboid movement, in the course of which it has been ascertained that it is due to a combination of atropine sulphate and methylene blue, provided sodium citrate and sodium chloride are present, and provided the blood is examined by a standard method which includes the presence of the factors, heat and alkali, already mentioned, which hasten the diffusion of substances into the cells.

Standard method of examination.—The blood freshly drawn from the finger is to be examined, under a cover-glass, when spread upon an agar film which contains the excitant in solution and which has been allowed to set on a slide.

Strength of the constituents of the agar.—It has been found that the following arrangement of the agar causes maximum excitation: Three cubic centimetres of a 2 per cent. solution of agar in water, filtered, neutralised, and sterilised; one cubic centimetre of Unna's polychrome methylene blue (Grübler) which has previously been diluted with two volumes of water—i.e., 1 in 3; and two cubic centimetres of a solution containing 4·5 per cent. sodium citrate, 1·5 per cent. sodium chloride, and 0·225 per cent. sulphate of atropine.[1] Before the atropine is added to the last solution the latter must be most accurately neutralised to litmus paper with citric acid.

Procedure to cause the stimulant to diffuse into the cells.—In previous papers (1, 2, 3) evidence has been given to show that the cytoplasm of leucocytes is a jelly which liquefies at death and that the diffusion of stain into it is hastened by heat and alkalies and delayed by neutral salts. Consequently, unless alkalies or heat are present in certain proportions the stimulant will not be rapidly absorbed by the cells and the amœboid movement will either be greatly delayed or will not occur at all. A 5 per cent. solution of sodium bicarbonate is a convenient alkali to use, and

* The figures in parentheses refer to the bibliography at the end of the article.

[1] Merck's reagents have been used throughout.

it must be added to the agar according to the temperature of the room in which the examination takes place.

Scale for the addition of alkali.—To cause stimulation in 15 minutes the following is appropriate :—

Room temperature, from—	5 per cent. solution of sodium bicarbonate.
15° to 20° C.	0·3 cubic centimetre.
20° to 30° C.	0·2 ,, ,,
30° to 40° C.	0·1 ,, ,,

The jelly is then boiled and a drop placed on a slide and allowed to set. The film will be found to be quite translucent.

Events to be observed by the above preparation.—A cover-glass bearing a drop of blood, or better citrated blood, should now be inverted on to the film and the preparation immediately focussed, preferably with a dry objective of high power. The cells will be seen tumbling over each other as the blood spreads to the periphery of the cover-glass. They

Reproduced from a drawing of a preparation of blood-cells resting on an agar film which contains methylene blue and atropine. Four living and two dead polymorphonuclear leucocytes are shown with one granular red cell. From a tube of citrated blood which had been kept at 30° C. for 38 hours.

gradually come to rest, however, and will be found to be excellently arranged for examination. All the cells will be quite unstained, though the leucocytes will be readily found owing to their granulation and size. A field should be examined where there are several leucocytes and where those cells are not completely hemmed in by erythrocytes. It should be noticed that when the leucocytes are flowing over the surface of the agar they are almost invariably perfect spheres and all pseudopodia are absent. In about one minute the granules begin to turn red and they stain more and more deeply as time advances until in about five minutes they are deeply stained. In two minutes, after the cells have come to rest, pseudopodia will be suddenly extruded. The cells will become more and more active until every leucocyte is extruding and retracting long tentacle-like pseudopodia, some of which contain a few granules, but the majority consist of clear cytoplasm. Sometimes the whole mass of stained granules and part of the nucleus move into the extruded pseudopodium. If the slide has been correctly prepared the pseudopodia may sometimes be twice as long as the breadth of the cell—in fact, the leucocytes frequently appear to be investigating the crevices between the red corpuscles. After 15 minutes the outline of the nuclei of the polymorphonuclear leucocytes becomes a faint blue colour.

Since, as has been shown in another paper (1), any attempt to stain the nucleus is followed by death, the pseudopodia will be slowly retracted, for a leucocyte appears to resume its spherical shape before death. As they are being retracted a neck will frequently appear just where the extrusions arise from the cells, as if separation was about to occur. If the cells are still watched, however, it will be noticed that the majority of the pseudopodia will be completely retracted, though a few may become separate bodies resembling blood-plates. Death occurs in about 20 minutes, and the cells burst or lose their stain almost immediately afterwards.

Precautions to insure maximum stimulation.—Success depends to a great extent on the addition of the correct amount of alkali to allow the cells to absorb the stimulant without causing too rapid death. The amount of alkali depends not only on the temperature, as given in the scale, but also on the neutrality of the solutions composing the jelly, for the expression "neutral to litmus paper" is indefinite. The citrate solution requires special attention, as the other constituents of the agar, if pure, will be found to be neutral. Methods other than the use of litmus paper might be employed for insuring neutrality, but since this method of demonstrating the stimulant has in itself an indication of absence or excess of alkali I do not think they are necessary. If the agar contains too much alkali the granules will stain very rapidly, pseudopodia may be extruded and retracted, and the cells may burst with great rapidity. If the nuclei stain purple, and especially if the nuclei of the lymphocytes stain, it is obvious that too much alkali is present; and another certain sign is the appearance of those "red spots" which have been described in a former paper (2). If too little alkali is present the granules will only stain slowly and the pseudopodia will only be like small buds. Further, the cells will live for an hour or more showing sluggish movements.

The above procedure has proved sufficiently reliable to differentiate living from dead leucocytes.—The foregoing has been repeated a large number of times and it has been found that if the agar has been correctly prepared the stimulation invariably occurs, so much so that if it does not occur it may be inferred that there is some error in the constituents of the jelly or in the temperature.

Effect of placing dead cells on stimulating agar.—If a drop of citrated blood which has been kept for four days or if a drop of fresh citrated blood which has been mixed with nitrobenzol is placed on a film as described, the leucocytes remain immobile and all amœboid movement is absent. This experiment can be controlled by placing a drop of fresh blood on another part of the same film and contrasting results, when the difference between living and dead cells is obvious. It has also been noticed that the nuclei of polymorphonuclear leucocytes frequently appear as a single conglomerate mass after death.

Evidence in favour of the view that absence of amœboid movement on stimulating agar is a sign of death.—There is nothing to demonstrate in the foregoing that cells are necessarily dead if they do not show amœboid movement on stimulating agar, even though fresh cells are stimulated on another part of the same film. The following observations, however, show that the cells are dead if they remain immobile: That the lobes of the nuclei of immobile polymorphonuclear and eosinophile leucocytes appear to have "run" together to form one nuclear mass; that the nuclei of immobile cells will frequently stain purple on stimulating agar, which will not occur in living cells if the jelly is correctly prepared, for it has been mentioned in a former paper (1) that the nuclei of dead cells will stain more readily than those of living cells; and that the granules of dead cells, provided they have not been long dead, may show Brownian movement, demonstrating the liquefaction of the cytoplasm. This point has been confirmed by comparing results with an alternative method of differentiating living from dead cells depending on the liquefaction of their cytoplasm.[2]

Length of the life of a healthy person's leucocytes after removal from the body, when they are resting in their own citrated plasma.—A series of tubes containing a volume of blood mixed with an equal volume of a solution having 3 per cent. sodium citrate and 1 per cent. sodium chloride were incubated at 30° C. and their contents examined at intervals on stimulating agar. A consecutive count of the cells was made in a series of preparations and the average number of living and dead polymorphonuclear leuococytes in each tube ascertained. A rough average appeared as follows. In 22 hours all cells were alive; in 30 hours, a few were dead; in 36 hours, nearly 50 per cent. were dead; in 48 hours, the

[2] The alternative method will be published shortly.

majority were dead; in 72 hours, a few were alive; and in 86 hours all were dead. The above measurements were carried out with aseptic precautions; if the tubes were infected with bacteria the lives of the contained leucocytes were very much shorter.

Apart from the fact that this stimulant affords a means of measuring the lives of leucocytes which may lead to important developments in the diagnosis of infective disease, it may also be found that it will increase phagocytosis. However, in its condition, as described in this paper, it is excessively poisonous, for 1 cubic centimetre of the jelly might kill a man. The stained cells showing exaggerated movements are most remarkable, so much so that the differentiation between living and dead leucocytes is a matter of great simplicity.

Investigation into the nature of the excitant shows that the stain plays the most important part in it. Exaggerated movements—that is, the extrusion of long curling pseudopodia, even at low temperatures—will occur without the alkaloid provided the agar is neutral, in which case the onset of the movement is delayed and not constant. With alkaline agar the alkaloid is necessary when all the cells show stimulation as described.

Bibliography.—(1) H. C. Ross: On the Death of Leucocytes, Journal of Physiology, vol. xxxvii., p. 327, 1908; (2) On the Vacuolation of Leucocytes and the Liquefaction of their Cytoplasm, Ibid., p. 333; (3) Diffusion of Red Blood Corpuscles through Solid Nutrient Agar, Brit. Med. Jour., May 5th, 1906.

Liverpool.

ON AN EXCITANT FOR THE LEUCOCYTES OF HEALTHY PERSONS FOUND IN THE BLOOD PLASMA OF PATIENTS SUFFERING FROM CARCINOMA.[1]

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THERE are some diseases which present constant pathological changes in one or another organ of the body to which most of the symptoms, whether subjective or objective, are referred, and the name by which the disorder is known is often associated with the lesion which chiefly characterises it. In gastric ulcer, for instance, we have a very definite and constant morbid condition which gives rise to well-known clinical signs, and yet, as was pointed out by one of us some years ago,[2] there are reasons for believing that the ulcer is the result of a more general systemic condition, often presenting prodromal as well as collateral symptoms which are not in any way connected with the stomach. And so in the case of cancer we have a disease called by a name derived from the character of a local growth which causes pain and distress and mechanical difficulties varying in degree according to the part which happens to be attacked, and these throw into the shade some less prominent general symptoms which may in the course of time prove to be the key to the situation and explain much that is at present problematical.

We wish to direct attention to the possibility that cancer is the local manifestation of a disease which is dependent upon changes in the blood, difficult to account for, but yet so constant that their association with the neoplasm cannot be disregarded.

The histology of the carcinomata has unfortunately failed to throw much light on the causes of the new growth, and so far as we are able to tell at present the changes which have been described in the cells in the way of the asymmetrical mitoses, &c., may be regarded rather as effects than as causes—indeed, the very essence of the explanation which is being sought after in every cancer research is the reason why these hitherto normal epithelial structures adopt this reproductive or vegetative character and give rise to cancer formation.

We do not gain much help by considering the localities which are mainly affected by carcinomata. There are those who still hold to the teachings of Cohnheim and Virchow that the primary growth results from an embryonic tissue inclusion which after a long period of quiescence undertakes active growth. To accept such a view shuts out the hope of preventing or of curing cancer otherwise than by surgical procedure but fortunately there are strong reasons for believing that in the case of the carcinomata, at all events, this explanation is incorrect. There is just one point in this relation, however, which is worthy of remark—namely, the fact that the growths are most apt to occur in organs which are tidal in character, such as the breast and the uterus, and in parts also which are subjected to irritation whether by the passage of normal contents, as happens at the narrower parts and flexures of the alimentary canal or by foreign sources of irritation; and we must not forget the cases of malignancy which follow sometimes immediately, sometimes remotely, after traumatism.

Here we have factors which have been explained in general terms as being the result of nutritional changes in the cells following upon irritation, but they do not tell us why only a fractional proportion of some large number of such cases becomes affected by cancer whereas all the rest escape, and this circumstance we think in itself suggests that some special condition of the blood must exist to start the grave morbid process in those people who become the subjects of the disease. We have to remember how selective the bodily tissues are with reference to the elements which they derive from the blood. The kidney draws through its blood-vessels much more blood than is required for its nutrition when the amount of waste products present stimulates it for its removal. The breast and uterus at the menstrual periods become turgid and their contained blood is no doubt rich in some material which stimulates their activity. Professor Starling has described how an extract obtained by crushing fœtal rabbits when added to the blood of a non-pregnant doe causes the breasts to enlarge and lactation to take place,[3] another evidence of the chemical character of a stimulus and of the selective power of a gland.

If we pass from the normal to the abnormal we must observe the fact that a part which is chronically irritated or inflamed or which has been injured, like the physiologically turgid breast or uterus, contains much more blood than is required for its normal nutrition, and that the vascular conditions of an injured or irritated part are different from those elsewhere owing to the processes of repair requiring some special nutrition. If, then, a general blood condition is present which one might suppose to characterise a cancerous tendency or diathesis, it becomes quite within the realms of feasibility that an irritated part or a part undergoing repair, each of which is drawing towards or through itself a blood containing special essentials (a reproductive blood, so to speak), might by its selective influence derive from the blood those abnormal elements which, if present, promote abnormal reproductive changes instead of those of normal repair.

One is reminded of the well-known experiment of Loeb, showing how the place of the normal organic stimulus to cellular activity may be taken by a chemical one in the case of the unfertilised eggs of the sea urchin and of the further observations made by Benjamin Moore, Roaf, and Whitley, proving that in the fertilised eggs of the echinoderms both the rapidity and the regularity of the growths of the cells are greatly influenced by alterations in the alkalinity in the sea-water in which they normally segment and proceed to the development of embryos.[4]

The hereditary or constitutional tendency to cancer, which no doubt exists in some families, is much more easily explained on this chemical hypothesis than by any cellular theory, and it seems much more likely that it will turn out to be a disease of metabolism or one depending upon some altered blood condition for which there may be a family predisposition. Idiosyncrasy plays an important part in the production of these types of disorder, and it is more than possible that the causal factors which originate the trouble

[1] A paper read before the medical section of the Royal Society of Medicine on Nov. 24th, 1908.

[2] Liverpool Medico-Chirurgical Journal, 1905, vol. xxv., p. 112.

[3] On the Chemical Correlation of the Functions of the Body, Croonian lecture, 1905.

[4] Proceedings of the Royal Society, Vol. B., lxxvii., 1906.

in one person or family may be impotent in others, so that an immunity may be said to exist in this as in some other diseases which are not known to be infective in the proper sense of the term.

An interesting point in connexion with the cause of cancer is the frequency with which some mental shock immediately precedes its incidence. In one of the very first cases which we investigated in connexion with the blood changes which we shall shortly describe the growth in the breast speedily followed the grief occasioned by the sudden death of the patient's husband. There are many such cases recorded, and Paget directed attention to the mental antecedents to the onset of the disease found in "deep anxiety, deferred hope, or disappointment."[5] We all know how other metabolic or blood conditions occasionally arise in the same way; for example, we might cite certain cases of diabetes or of Graves's disease, or of those cases of general interference with nutrition which cannot be well explained in the present state of our knowledge other than by their being due to nervous influences which occasion an altered bodily chemistry.

Similarly, certain diseases of the influenza type have been thought to be the precursors of carcinomatous growths and it is remarkable how frequently they have arisen in cases of rheumatoid arthritis, and thus we have abundant suggestiveness that conditions affecting the chemistry of the body may give rise to a predisposition which results in the onset of the malady we are now considering.

There is one more very important pathological reference to be made indicative that blood changes are constant in cancer cases—namely, the diminished acid-secreting function of the stomach which is present, not only when the disease attacks the stomach, but, as Moore has shown, in every case of cancer "wherever the growth may occur in the body." It is not necessary to go into the elaborate explanations of this fact which are set forth in Moore's papers,[6] communicated to the Royal Society and elsewhere. Suffice it to say that he concluded that "the absence of acid or reduction of acid-secreting power seen in cases of cancer of all regions points to the change being due to a change in the plasma and lymph"; "that the alkalinity of the inorganic constituents of the plasma is increased in cancer"; that "increase in alkalinity up to a given degree leads to increased cell growth and pathological nuclear divisions in organisms which are unable to protect themselves against artificially increased alkalinity"; and that "irritation and inflammation are accompanied by increased alkalinity of the lymph which is a factor in stimulating cell growth and when long continued may lead to the excessive nuclear division and cell growth of malignancy."

Such, then, are some of the facts which direct attention to the blood as being possibly the primary part affected in cancer cases, and no doubt workers in chemical pathology will be able to report later some interesting facts as to the early chemical changes which may be discovered leading up to the local outbreak. There are some clinical facts, however, which are worthy of note, be they cause or effect, of the carcinoma to which we desire to direct attention. In the Liverpool Home for Incurables and in the Royal Southern Hospital, where so many opportunities of watching these cases have presented themselves, the presence of the disease has almost always been well established when the patients have come under observation, so that it has not been possible to note any early constitutional changes if such exist.[7] In the course of the cancer, however, no matter where it may be situated, it has often been remarked that the sufferers have presented a toxæmic appearance. Mental apathy, amounting in some cases to slight stupor, and even mild delirium have been noted and these conditions quite unrelated to the use of narcotics. These symptoms and their variants, in fact, constitute part of the cancerous cachexia. On more than one occasion the very words used when referring to this state have been "that the patients have looked as though suffering from an alkaloid-like toxæmia."

One of us collaborating in this paper (H. C. R.) has made extensive observations, extending over a period of three years, concerning the diffusion of stain into living leucocytes. After ascertaining that the cytoplasm of leucocytes exhibits jelly-like properties and knowing that the rapidity of diffusion of hæmoglobin into agar jelly is hastened by the presence of *heat* and *alkalies*, he made experiments[8] which have demonstrated that the diffusion of methylene blue into leucocytes is influenced by the same two factors. He then turned his attention to the diffusion of substances other than stain into the cells, experimenting especially with alkaloids, and he ascertained that if the cells are resting on jelly (agar) which contains, besides neutralised sodium citrate and sodium chloride, a certain proportion of methylene blue and atropine sulphate the leucocytes will exhibit exaggerated amœboid movements, consisting in the extrusion and retraction of long curling pseudopodia. The stain was found to be the important constituent of this excitant. If the jelly is neutral the excitation will occur without the addition of the alkaloid, although it is not constant; if, however, an alkali, such as sodium bicarbonate, is added in amount proportionate to the temperature of the room at which the experiment is made so as to produce diffusion of the stain into the cells, very marked and constant excitation takes place, *only provided the alkaloid is present*, whereas if no alkaloid is present no excitation takes place in the alkaline jelly. In other words, the *alkaloid is an essential factor* for the production of excitation in an alkaline, stain-containing jelly.

This fact having been practically demonstrated, a conversation took place between us concerning the alkaloid-like toxæmic symptoms above referred to in cases of cancer, and one of us (C. J. M.) suggested that there might be in the blood of cancer patients some substance which in the presence of the alkaline plasma acted as a stimulant to the normal cells, thereby in some way giving rise to the new growth. Attention was directed to the fact that a patient was then in the wards (under the care of C. J. M.) suffering from carcinoma of the pylorus, who, not taking any narcotics, presented toxæmic symptoms resembling those which might be produced by an alkaloidal poison. We together saw the man and were struck by the fact that he was mentally dull and his pupils contracted.

One of us (H. C. R.) had previous to this been making some measurements of the lives of healthy leucocytes when bathed in the plasma of different persons. He had ascertained that the plasma of persons known to be suffering from carcinomata did not comparatively shorten the lives of the leucocytes of healthy persons in contradistinction to the effects produced by the plasmata of persons suffering from several infective diseases—this fact indicating that cancer is not an infective disease. This was an important point to eliminate before proceeding to discover whether, on the other hand, anything in the nature of an excitant existed in the blood of cancer patients.

Consequent upon the clinical fact which we have referred to, and since we had observed the effect of the artificial excitant on leucocytes, we determined to ascertain whether the plasma of cancer patients contained any excitant, pathological in character, for the leucocytes of healthy persons, the following being the procedure adopted. The patient's citrated blood was centrifugalised and the citrated plasma mixed with one-eighth of its volume of the blood of a healthy person. The whole was kept at a temperature of 37° C. for half an hour and then a drop no larger than a pin's head was placed on a slide and covered and examined at 20° C. Within half an hour after removal from the incubator some of the leucocytes showed the remarkable movements which were more marked than those seen when the artificial atropine excitant was used.

Since leucocytes mixed with the citrated plasma of healthy persons had been examined a very large number of times in the course of earlier researches, and when exaggerated movements were never seen, it appeared as if there actually was a pathological excitant in the blood of this cancer patient as suggested by one of us (C. J. M.). The matter was therefore put to further test, nine other cases of cancer affecting

[5] Lectures on Surgical Pathology, 1863, p. 780.

[6] Proceedings of the Royal Society, vol. B. lxxvi., 1905: On the Absence or Marked Diminution of Free Hydrochloric Acid in the Gastric Contents in Malignant Disease of Organs other than the Stomach.

[7] Since this was written two cases of very early mammary cancer have been investigated. In one of them the growth was not larger than a filbert and yet the blood was stimulating to healthy leucocytes.

[8] Journal of Physiology, Cambridge and London, 1908, vol. xxxvii., p. 327.

various situations (three of the breast, one each of the uterus and the sigmoid flexure, two of the pylorus, and one each of the jaw and the rectum) being similarly investigated,[9] and the interesting fact was elicited that every one of them responded in the same way.

In spite of the circumstance that the plasmata of large numbers of persons not suffering from cancer had already been examined without any sign of an excitant being present, 50 special control experiments were now conducted, the plasmata being taken from house surgeons, nurses, and hospital patients both medical and surgical (cancer patients being alone avoided). In two only of these did the plasma act as an excitant to healthy leucocytes. Both of these were seamen suffering from malaria, who had recently returned from the West Coast of Africa, and they had both been taking large doses of hydrochloride of quinine. Since it was known to us that the hydrochloride of quinine will act as a substitute for atropine sulphate in the artificial excitant and cause stimulation of leucocytes in the presence of an alkali, it was resolved to test whether the quinine in the blood of the two sailors had occasioned the excitation. Thus:—One of us gave one patient out of a series in a ward three doses of hydrochloride of quinine, the other being afterwards asked to examine the bloods of the whole series, and he correctly singled out the patient who had taken the alkaloid by the presence of the excitant in his plasma.

Although the number of patients suffering from carcinoma in whose plasma we have found the presence of this excitant for healthy leucocytes is comparatively small, it has been present in all of them, and it would appear as if the suggestion made by one of us is correct, in view of the number of control experiments which we have carried out with negative results. In fact, it is reasonable to suppose that there may be in these cases some substance resembling an alkaloid in its action which in the presence of the alkaline plasma excites the amœboid movements of healthy leucocytes.

We desire to direct attention to the fact that methylene blue is a coal-tar derivative and it has been found by one of us that both pyridin and quinolin, also coal-tar derivatives, can take the place of the alkaloid and cause stimulation. This point is the more interesting when we consider the frequency with which workers in coal tar suffer from cancer.

Since writing the above our attention has been directed to the interesting pathological mitoses (described by O. and R. Hertwig and Galleotti) induced by quinine, chloral, nicotine, antipyrine, cocaine, and potassium iodide, and to the statement of Galleotti that the asymmetrical mitoses produced in the epithelial cells of salamanders by treatment with dilute solutions of antipyrine, cocaine, or quinine are exactly like those seen in carcinoma. These observations tend to confirm the possibility that the excitant which we have found to be so constantly present in patients suffering from cancer, and which reacts like the alkaloids with which we have experimented in the artificial excitant, may play some part in the production of the asymmetrical mitoses found in carcinomata.

One case of sarcoma and one of lymphadenoma have been investigated by us and no excitant for healthy leucocytes has been found in either of their plasmata.

As an addendum to what we have said may we refer to the possibility that this reaction may prove serviceable as an aid to diagnosis? The pitfalls of research are numerous and we desire to point to this with all caution in view of the circumstance that although we have examined the bloods of patients suffering from numerous other diseases there may yet be some in which the plasma has this excitant effect upon the leucocytes of a healthy person. The fact remains, however, that medical men have sent us doubtful cases to investigate; some have given a negative reaction and have afterwards proved to be innocent growths or no growths at all, whereas in other cases the presence of cancer, indicated by positive reaction, has been confirmed by the subsequent examination of the tumour or by the history of the case.

Liverpool.

[9] And since this paper was written a very large number of cancer cases in which the disease affected various situations.

DEATH OF A CENTENARIAN.—The *Times* announces the death of Susan O'Hagan, aged 106 years, which occurred at Lisburn on Jan. 7th.

ILEOSIGMOIDOSTOMY FOR THE RELIEF OF INVETERATE CONSTIPATION.

BY C. W. MANSELL MOULLIN, M.D. OXON., F.R.C.S. ENG.,

SENIOR SURGEON TO THE LONDON HOSPITAL.

EIGHT years ago, in October, 1900, I proposed and carried out, as I believe for the first time, the operation of ileosigmoidostomy for the relief of inveterate constipation, dependent upon inefficient action of the large intestine. The case was fully reported in the Transactions of the Medical Society for April 22nd, 1901. Four years later I heard of the patient again. She was still perfectly comfortable. The bowels were acting well, either of themselves or with small doses of some laxative, such as compound liquorice powder, and there had been no further trouble. Since then I have had occasion to perform the operation upon six other patients for essentially the same state of things—obstinate constipation, resisting all the ordinary measures of relief, not caused by stricture or any other gross organic change in the large intestine, so persistent as to lead to serious impairment of the patient's health. A separate description of each of these is scarcely necessary. The record of one will suffice for the rest.

The patient was a married woman, 48 years of age. (I have only met with two cases in men, both of whom declined operation.) All her life she had suffered from constipation, which had been steadily growing worse and worse. (In this respect this patient differed from my original one, in whom the constipation had been preceded by a long spell of diarrhœa, apparently dependent upon some form of colitis.) At first the bowels had acted fairly well with purgatives but these had now almost lost their effect. For some time past she had had to supplement them with enemata, and even then she was not always successful. Each action was attended by severe abdominal pain, localised chiefly in the left iliac fossa. It began before the bowels acted and continued for some hours afterwards, so that an action was looked forward to with dread and postponed for as long as possible. The patient was a thin, spare woman, with the earthy tint of complexion so characteristic of chronic intestinal autointoxication. The tongue was habitually foul and the breath offensive. The appetite was bad and partly for this reason, partly because of the pain attendant on defæcation, very little food was taken. The abdomen was not distended. It was tender all over, especially in the left hypochondriac and iliac regions. No tumour could be felt. The cæcum was moderately distended with gas which could be displaced upwards and returned again after a while. The descending colon and the sigmoid flexure could be felt as a firm contracted band lying against the posterior wall of the abdomen. Per rectum there was nothing abnormal. There was often a feeling of sickness but no actual vomiting. The motions when passed without enemata were very small in quantity, dark in colour, offensive, and made up partly of liquid, partly of little hardened masses. There was no excess of mucus.

As massage, galvanism, and all the ordinary remedies had been thoroughly tried already, it was determined to perform ileosigmoidostomy without further delay. The abdomen was opened in the middle line. No gross lesion of any kind was found. The chief feature was the extreme thinness of the walls of the large intestine, but there was nothing else noteworthy about them. The lower end of the ileum, about six inches from the cæcum, was united by direct suture to a convenient portion of the sigmoid flexure and a lateral anastomosis over four inches in length made between the two. The ileum was not divided. The patient made an uneventful recovery. On the second day a small, semi-solid motion was passed, the first spontaneous one for some years; and so long as she was in bed the bowels were kept going without difficulty with small doses of sulphate of sodium. This was dropped as soon as she began to get about, and though laxatives were required occasionally there was no further occasion to make use of purgatives or enemata, and there was no pain. At times, it is true, there was a certain amount of discomfort, especially if there was much flatulence, but the patient insisted it was nothing worse. Two years after she was still

quite comfortable, the motions being for the most part semi-solid, but not otherwise differing from the normal. Her complexion and general state of nutrition showed very great improvement.

Of the other six cases in which I have performed this operation one (the one detailed in the Transactions of the Medical Society) was seen by me four years after; two more than two years, and one 18 months. The others are of too recent date to be of much value in this respect. There has been no fatality.

The merits of this operation are briefly: (1) it meets the requirements of the case in the simplest way by enabling the intestinal contents to evade that portion of the bowel in which they are specially prone to be detained; (2) it is almost entirely devoid of risk; with reasonable care there is the minimum of danger in making a lateral anastomosis between two contiguous portions of the bowel when there is no distension; and (3) it does not deprive the patient of any organ, whether this is of service at the time or not. The function of the large intestine is very little understood; but there is good reason to warrant the assumption that its first portion, up to the middle of the transverse colon or a little beyond, differs in many important particulars from the rest. It is here, for instance, that absorption of fluid takes place, and the fæces pass from an absolutely liquid to a semi-solid state; and here, also, there are at times antiperistaltic waves which not inconceivably are associated with this absorptive power. In cases of inveterate constipation such as these it is not clear which of the two portions is primarily at fault; or even if one portion is more at fault than the other; but it is fairly evident that it is the first which suffers. The idea of this operation is not to get rid of this part of the bowel, because its work is not carried out as efficiently as it might be, but to help it and give it a certain measure of relief by providing an alternative route. To effect this properly the opening must be free, not less than four inches in length, and the ileum must not be divided. There is nothing to be gained by dividing the ileum beyond the anastomosis and a good deal to be lost. Division means breaking the continuity of peristalsis and leaving the cæcum and the greater part of the colon literally as a blind receptacle, without the possibility of any stimulus reaching it through the bowel on the proximal side—a condition which on *a priori* grounds at least would seem to be more likely to perpetuate the condition of stagnation than to relieve it.

Wimpole-street, W.

A NEW METHOD OF ORCHIDOPEXY.

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THE results of orchidopexy have been so unsatisfactory as to lead a number of authorities to advocate in all cases the excision or replacement within the abdomen of the undescended testicle, especially as there is evidence to show that the retained testicle seldom becomes functional. In spite of the cogency of these arguments, orchidopexy is often enough performed either on account of the "suitability" of the case or at the patients' or their parents' request. It is essential, therefore, to have a surer means of bringing about fixation than those hitherto practised. The failure of the procedures in vogue at the present time is mainly due to the fact that too much reliance is placed on a few delicate sutures, placed in soft tissues, to counteract the marked elasticity of the cord.

I have had occasion to operate (with the kind permission of the honorary surgeons of the Ashton-under-Lyne Infirmary) on three cases of undescended testicle by a method which, though only slightly different from the one in common use, yet has given such surprisingly good results as to induce me to publish it. The operation is as follows.

The usual incision is made over the inguinal canal, the aponeurosis of the external oblique is divided, the cord is freely separated and its coverings are defined. Any peritoneal process, whether continuous with the tunica vaginalis (patent funicular process) or a separate hernial sac, is dealt with as in herniotomy. The finger is next introduced into the scrotum and a new pocket is made for the reception of the testicle. With all these preliminary steps and with the various ways of lengthening the cord the reader is no doubt familiar. Attention is now directed to the testicle itself. The parietal layer of the tunica vaginalis is slit open extensively, exposing the testicle enveloped by the visceral portion of the peritoneal pouch. The parietal covering now hangs loosely from the margin of the gland. At this stage a small opening is made at the most dependent part of the scrotum, through which a fine pair of pressure or other forceps is introduced and made to grip the parietal tunica. Gentle traction on the forceps brings the overhanging membrane out of the scrotal opening and the testicle gets firmly lodged into its new bed. The external oblique and the inguinal wound are now sutured, taking care to diminish greatly the size of the external abdominal ring. All that is necessary now is to close the scrotal wound by a purse-string suture of silkworm gut which picks up substantially skin and parietal tunica. The suture is drawn tightly and the redundant piece of membrane is cut off, leaving, however, a sufficiently long tuft (to which if necessary a pair of pressure forceps may be left attached) to render the hold of the ligature secure. To counteract the tendency to retraction the long ends of the purse-string are stitched to the skin of the adjacent thigh. Thus, one suture is made to serve as a means of fixation and extension.

The following advantages may be claimed for this little operation. It is simple. The testicle is firmly anchored to the skin by the parietal layer of the tunica vaginalis and by the adhesions which form between the visceral layer and the scrotal tissues.[1] There is no injury to glandular substance. No sutures are left in the scrotum and the tendency to suppuration is thus greatly minimised.

Ashton-under-Lyne.

FIBROLYSIN IN OPHTHALMIC PRACTICE.

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FIBROLYSIN, introduced three years ago, is a preparation which seems to be destined to take an important place in the Pharmacopœia. Produced on the continent, it appears to have been very little employed, in fact hardly known in this country up to the present, although the range of its utility promises to be a very wide one.

As far back as 1892 Dr. von Hebra published the favourable results which he had obtained in the healing of lupus and of cicatricial tissue by means of thiosinamine, a preparation made from the oil of mustard, smelling strongly of garlic, and of the chemical composition of allyl-sulpho-urea. These good results were verified by others, but the remedy, in spite of its valuable properties which I shall mention presently, did not become popular, and this for one very good reason—namely, the almost complete insolubility of the preparation in water. Dosage per os not having been found suitable it had to be applied by injection and for this purpose had to be dissolved in alcohol. These injections were, however, so intensely painful that the application became altogether impracticable until, in 1905, Dr. Mendel of Essen suggested a modification of thiosinamine which at one stroke changed the future of this remedy.

Fibrolysin represents a combination of one molecule of thiosinamine with half a molecule of salicylate of sodium. Its principal advantage over thiosinamine is the easy solubility in water and the absence of any irritant effect when injected subcutaneously. The drug itself is a white crystalline substance with a bitter taste. It decomposes easily when exposed to air and light and is therefore put up in closed tubes of brown glass in doses of 2·3 cubic centimetres of a 15 per cent. aqueous solution, equivalent to two decigrammes (three grains) of thiosinamine.

The effect of fibrolysin on cicatricial tissue is very remarkable; turgescence takes place, the individual fibres lose their sharpness of outline, the nuclei are pushed asunder, and the tissue appears more succulent and swollen and altogether

[1] Jacobson and Rowlands recommend the excision of the parietal layer of the tunica vaginalis.

[2] A paper read at the Liverpool Medical Institution on Nov. 19th, 1908.

enlarged. The whole scar becomes more relaxed and permits of movements altogether impossible before injection. This effect is considered to be due to a serous infiltration or flooding which slackens the old inflammatory and now hardened fascicles similarly to the hyperæmia of the Bier method, and renders them thereby more readily amenable to absorption by the increased lymph stream. This result, transient at first, becomes more and more permanent by repeated injections. It is noteworthy that fibrolysin has this effect only on pathological connective tissue.

The mode of application is by injection, either intravenous, intramuscular, or subcutaneous. The intravenous method would be suitable only where a very rapid effect is desired and it would be advisable to select for this purpose large veins, where the danger of thrombosis from injury to the epithelium is comparatively small. Secondly, there is the intramuscular injection, and as the best locality for injection the glutæi have been recommended. But this appears to me unnecessarily inconvenient for the patient both physically and psychically and affording no advantage over the third method, which alone I have applied—namely, that of hypodermic injection. As for locality, I have in all cases chosen the upper arm as likely to cause the least amount of inconvenience.

With regard to the favourable results obtained, I originally intended to give only those obtained by myself in ophthalmic cases, but on noticing that the title of my communication has been put down on the programme more generally "on fibrolysin" I think it might help the discussion if before giving my own experience I were to allude shortly to the kind of cases of internal medicine and surgery which have been reported in the literature on the subject.

First, I must mention the treatment of strictures and stenoses due to inflammatory and cicatricial contractions, amongst them those of the œsophagus and pylorus due to injuries from caustic fluids, &c. Under the influence of the drug dilatation by bougies became possible and ultimately remained permanent. Similarly urethral strictures as well as prostatitis after gonorrhœa yielded satisfactorily to the treatment. It may here be mentioned that the urethroscopic examination presents an excellent means of watching the immediate effect of the injections on the scar tissue, which from being pale and tense changes to a hyperæmic and softened appearance. In this respect the action of fibrolysin reminds us of that of dionin when applied locally to the conjunctiva. Cases of chronic arthritis have been greatly benefited and noticeably those where adhesions existed in the cavity of the joint. To mention internal medicine, Roos reports good results in three cases of mitral insufficiency of inflammatory origin. Neuritis and neuralgia due to cicatricial changes of the nerve sheaths showed marked improvement in cases where the nerve fibres themselves had not been already destroyed; and there is also a case of locomotor ataxia reported[3] in which distinct improvement resulted. When, therefore, a few months ago the following case came under my notice it occurred to me that fibrolysin ought to have a trial. The following is a short account of the case.

The patient, a man, aged 40 years, gave the following history. On April 13th, 1908, the left side of the face, the left upper and slightly the lower eyelids, and both the hands were scalded with oil at 280° C. The patient was taken to the hospital where he remained as an in-patient until May 2nd; then he attended as an out-patient until May 23rd, when he was told that he was cured and need not attend any further. The left eyelid had been healing more slowly than the other parts. On June 4th his employers sent him to me asking whether any improvement could be obtained. On examination I found traces of scalding of the left side of the forehead and of both hands. The left upper eyelid had been scalded much more severely, also the left lower lid, though in a lesser degree. The temporal half of the eyebrow was pulled down with the supercilia mostly gone or displaced. The middle part of the upper lid was contracted upwards by a broad, tough, thickened band, the lashes missing in the centre and displaced towards both the inner and outer canthus. The eye neither opened well nor closed completely and this state had evidently caused the corneal ulcer, which was situated horizontally in the lower quadrant of the cornea. The scars being still red and the scar tissue having been formed within the last six weeks it was certain that further and much greater contractions would take place within the course of the next few months. Any plastic operation would have been premature at that time, and I therefore tried to get the corneal ulcer healed first. This being done, I resolved to try fibrolysin. The accompanying illustrations, Figs. 1 and 2 (the left eye open and closed respectively), were taken at that time. On June 27th I gave the first injection, beginning with 1 cubic centimetre. This was so well borne and without the slightest unpleasant symptom that on June 30th

FIG. 1.

Before application of fibrolysin. The left eye does not open well.

FIG. 2.

Before application of fibrolysin. The left eye does not close properly.

[3] Brit. Med. Jour., 1907, p. 1471.

I gave a full dose (2·3 cubic centimetres) and continued at fairly equal intervals until August 11th, when the tenth and last injection was given. The result was surprising indeed. The lower eyelid soon became quite normal in appearance and equally so the skin of the left side of the forehead and of both hands. The left upper eyelid, instead of undergoing the shrinkage which ordinarily would have taken place, became more moveable and normal in appearance, the thick band in the central part gradually softening and thinning so that the eyelid when open had practically a normal appearance. Figs. 3 and 4 were taken on Oct. 10th. In Fig. 3 (the left eye looking upwards) shows how well the upper eyelid folds backwards, no stiffness or contraction marring the folding. Fig. 4 shows the eyelids closed. When it is considered what a large defect of normal palpebral skin had been caused through the burning the final result after the subsequent suppuration is eminently satisfactory, and I am glad that there is no excuse, let alone a need, for resorting to what is euphemistically called a "plastic operation" of the upper eyelid.

FIG. 3.

After ten injections of fibrolysin. The left eye opens well.

Encouraged by the result of this case I have tried fibrolysin in other ophthalmic cases which I will mention briefly. One case of retrobulbar optic neuritis after influenza appeared suitable and I gave six injections. The result was thoroughly satisfactory; I am, however, unable to say whether the good result was due to the fibrolysin or to the strychnine and mercury or to the combination of all three. Fortunately these cases are not frequent and I shall certainly try fibrolysin in any future cases before resorting to operative interference with the optic sheath.

With regard to clearing up of corneal opacities my results have not been all equally good. The case given above has thus far been the most successful; the ulcer in the lower quadrant had healed with a scar of nearly 3 millimetres in length and this scar is now only point-shaped. I have also tried three cases of fairly dense corneal opacities, all three of long standing, in patients of middle age (35, 38, and 45 years respectively). They all certainly improved a little, but the progress being rather slow I also applied the dionin treatment, which is perhaps mainly responsible for the improvement ultimately obtained. Great success followed in two cases of posterior synechiæ of old iritis of rheumatic origin, the one a woman of 40 years and the other a man of 35 years. In neither of them did atropine produce any dilatation of the pupil until after some injections of fibrolysin, when in both cases the atropine succeeded in effecting dilatation.

In analogy of the cases of urethral strictures that have been described I have used fibrolysin in a case of lacrymal stenosis due to stricture of the soft tissues. In this case probing after three injections has been so far successful that for the last four weeks no probing was necessary, and stillicidium was stopped which had been constantly troublesome for the last three years.

From these comparatively few cases I have already—and I do not think rashly—gained the conviction that in fibrolysin we have a very valuable addition to our resources. It is certain that without it the left upper eyelid of the patient I showed here to-night would never have regained its practically normal function and its complete pliability. A plastic operation would at best have had a very poor result compared with the present state, and I shall in future apply the drug in every ophthalmic case in which any cicatricial tissue present, old or new, may account for undesirable symptoms.

I must not omit to mention some disagreeable symptoms which have been described as sometimes accompanying or following the application of fibrolysin—viz., a burning sensation round the point of injection, lasting half a minute to a couple of hours, discolouration of a yellowish, later bluish, tint, formation of a hard nodule of the size of a cherry which may take weeks or even months to disappear. There are also general symptoms reported: headache, lassitude, and heaviness, lasting from a few hours to a day or more. Dr. Urbantschitsch mentions a case where regularly about 12 hours after each injection menstruation occurred; this completely resembled the normal menstruation and lasted from two to three days. For this reason the further administration of the drug had to be abandoned in this instance. Another case is mentioned in which epistaxis occurred.

FIG. 4.

After ten injections of fibrolysin. The left eye closes well.

As a note of warning I must not forget to quote the experience which Glas relates in 1903 in a case of nasopharyngeal syphilis. After the fourth injection of thiosinamine succulence and swelling of the subglottis set in and developed to such a degree that owing to the great dyspnœa

tracheotomy had to be resorted to. On account of the tendency to produce congestion, fibrolysin should not be employed in arterio-sclerosis in patients of advanced age. In my own cases I have never experienced any unpleasant effect whatever except two or three times some sensitiveness at the place of injection with or without a slight thickening at the same place, both disappearing soon.

As a curiosity I may mention that the patient shown here to-night said half a minute after each application that he "smelt" the injection, perceiving a peculiar sensation of smell which he could not describe further.

Addendum.—While correcting the above proof I received the following from Dr. S. M. Whitaker of Waterloo: "Two days ago (Dec. 31st, 1908) I injected 2·3 cubic centimetres of fibrolysin hypodermically into the left forearm of a lady, aged 37, who is suffering from ulceration of the stomach with perigastric adhesions, this being the first occasion on which she had been given fibrolysin. Within one minute after injection she complained of 'feeling queer.' She breathed rapidly and deeply, became cyanosed, with small pulse, and complained of 'pins and needles' in the fingers and toes and of 'loss of feeling' in the left forearm and left side of the body, and she had definite anæsthesia of the left hand and forearm. She was menstruating at the time and soon after the injection complained of severe uterine colic. These symptoms abated in about three-quarters of an hour. Three hours later she was quite well with the exception of a feeling of numbness in the left hand which passed off a few hours later. Two days later (Jan. 2nd, 1909): Patient has shown no further symptoms and has returned to her former state of health. (All the organs are healthy in this patient excepting the stomach)." This case emphasises the advisability of beginning with a small dose, say 0·5 or at most 1·0 cubic centimetre, and of avoiding as far as possible the time of menstruation.

Liverpool.

AN EFFICIENT TREATMENT FOR PNEUMONIA.

BY DANIEL CROWLY, M.D., M.CH. R.U.I.

IN a paper by Dr. W. Ewart which appeared in THE LANCET of Jan. 21st, 1905, p. 138, entitled "The Principles of Treatment of Pneumonia," which is supplemented by a communication from the same author in the *British Medical Journal* of May 21st, 1908, a course of therapeutics is indicated which I have tried with success. In my practice an initial dose of calomel was given, followed by four-hourly doses of a mixture containing 4 grains of iodide of potassium, 10 grains of citrate of potassium, ½ drachm doses of solution of citrate of ammonia, and in one case a little brandy. Dr. Ewart lays great stress on a much greater frequency of administration with larger doses of solution of citrate of ammonia, and prescribes six doses at one hour's interval, a few doses at intervals of two hours, and subsequently intervals of four hours.

CASE 1.—On March 23rd, 1908, I was called a distance of 13 Irish miles to attend a man, aged 65 years, for his seventh attack of pneumonia, having attended him six times previously and for double pneumonia in his second last attack. The patient had given up hopes of recovery, as he remembered that I said on the last occasion that if he got another attack he would die. I told him that I had a new treatment and gave him 3 grains of calomel, applied, as is my invariable practice, strips of blister with intervals of about one inch, and over them a linseed poultice, and gave the mixture previously mentioned: Iod. pot., gr. 4; pot. citratis, gr. 10; liq. am. citr., ℥ss., in a tablespoonful of water every four hours. I saw the patient on the next day; he seemed, and was, much improved. On the following day I was stopped when going to see him by his brother, who said that the patient was well. Previously I had paid five and six visits before the patient would show signs of improvement, and this time one eight-ounce bottle containing pot. iodid., gr. 64; pot. citratis, ℥iij.; liq. am. cit., ℥i., seemed to have cured him.

CASE 2.—This patient, aged 25 years, lived seven Irish miles away. The messenger described him as having great pain in his side. On the chance of the case being one of pneumonia I took the iodide mixture with me. I found the patient, a strong young man, with a temperature of 102° F., complaining of great pain about the left shoulder and coming around to the front of the chest towards the cardiac region. He could not move without feeling great pain and had to be supported by two men whilst I was examining him. I found frictional sounds behind and slight dulness, and though the aspect of the case was not unlike that of cerebro-spinal disease, while there was no cough, I judged that probably the patient was in the early stage of a pneumonia, so I gave calomel 3 grains, applied strips of blister to his side, &c., and gave the iodide of potassium mixture every four hours. That was on July 28th, 1908. I next saw the patient on the 30th, with a smile on his face and able to get out of bed without pain or assistance.

CASE 3.—I saw the patient, a girl, aged 18 years, on a Friday about 1 P.M. with a temperature of 104·4° F., quick breathing, slight cough, but no blood then in the expectoration, usual pain below the shoulder, dulness, tubular breathing, and every sign and symptom of pneumonia, except bloody sputum. I gave calomel, grains 3, and cascara, grains 4, at once, applied strips of blister to the painful part one inch between each and linseed poultice over them, and the following mixture: Pot. iodid., gr. 48; pot. cit., ℥ii.; liq. am. citr., ℥i.; syrupi, ℥ss.; aquam ad ℥vi.; half an ounce to be taken every four hours. I saw the patient on the next day, Saturday, at about 11 A.M. Her temperature was 99°, her breathing was easier, her pain had gone, and there was a slight tinge of blood in the sputum. She had slept comfortably and felt much better. I saw her again on the Monday morning following; her temperature was normal, there was no blood in the sputum, she had no pain and felt very well; slight dulness and soft râles were present. I allowed her to be up in seven days, when she was without a trace of pneumonia.

I have had since these six other cases similar which I treated with iodide of potassium mixture. The nine cases all terminated in resolution in a surprisingly short space of time. The dietary ordered in these nine cases consisted of milk and water mixed when it agreed with the patient, and when otherwise whey and plenty of cold water to drink whenever the patient wished. In one case only, a child who had whooping-cough and developed pneumonia, did I order brandy. I also had a linseed poultice applied over the strips of blister, which the patients say gives great relief to local pain.

Previously I had treated my pneumonia patients with the usual array of medicines—am. carb., nux vomica, digitalis, liquor strych., quinine, oxygen gas, vin. ipecac., seneg., &c., and as dietary such as I have mentioned, with egg-flip, according to the patient's wants, and locally strips of blister with linseed poultice. I regret I did not know of this treatment earlier as two of my cases a short time before terminated fatally.

These nine cases may not count much with some, but to me the results seemed wonderful. If everyone who read about this treatment had nine equally successful cases Dr. Ewart would deserve well of these sufferers, and in justice to the latter, who are so numerous, I would suggest its trial by others.

Loughrea, county Galway.

ANNUAL REPORT OF THE MADAGASCAR PASTEUR INSTITUTE FOR 1907.—Dr. Salvat, director of the Pasteur Institute at Antananarivo, has issued his annual report for 1907. In it he states that 86 persons underwent the treatment during the year for the prevention of rabies without a single fatality. In two instances which occurred in the laboratory of the Institute, those of the ex-director and one of his assistants, the patients were accidentally inoculated with material from a mad dog while conducting experiments. In 20 cases the animal which had inflicted the injury was proved by experiment to have had true rabies; in six instances a duly qualified veterinary surgeon had certified the animal to be suffering from that disease; in 58 other cases the diagnosis had not been verified for one or another reason. None of the 86 patients who passed through the treatment suffered subsequently from any inconvenience except two who developed some amount of paralysis but who at the time when the report was written had almost entirely recovered. In the previous year 142 persons submitted to the treatment and of these three subsequently died.

A NEW PARASITE SEEN IN A CASE OF DYSENTERY.

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AN Indian adult recently returned from New Guinea was admitted to the Government Civil Hospital, Hong-Kong, suffering from dysentery. He had fever, furred tongue, frequent bloody stools, tenesmus, pain over the colon, &c.

The first microscopical examination of the fæces in addition to blood and mucus cells showed a large number of what looked like encysted amœbæ, save that many of them had a slow circular movement. On the following day numerous pear-shaped bodies were seen actively motile with the pointed end always in front. They were full of granular matter, devoid of cilia or flagella, and of about the size of an average amœba. Opposite to the pointed end and close to the periphery was a small contractile vacuole of about half the size of a red blood cell which disappeared at regular intervals of 20 or 30 seconds. Under a moist chamber the parasite was watched all day and its development studied. After rushing about for a time it gradually slowed down and became circular, the circle going slowly round either to the right or left. As soon as all movement ceased it divided into two, each half having its contractile vacuole. These two divided into two others, each again with its vacuole. After a short interval all four divisions started moving round on their own axis, finally bursting the envelope and emerging as active pear shaped bodies, the whole process taking from three to three and a half hours. Only on the second morning were these parasites seen, though the stools were examined twice daily for many days. I was able to keep them alive and increasing in numbers for four days in the fæces, to which a little Liebig's extract was added. They then died out completely. The only other parasites present were cercomonas intestinale. The accompanying reproductions of microphotographs explain the process of multiplication.

I have examined large numbers of fæcal specimens and have never seen anything like this. Whether they are peculiar to New Guinea I cannot say.

Hong-Kong.

FIG. 1.

First stage of parasites, resembling encysted amœbæ.

FIG. 2.

Second stage: division into two.

FIG. 3.

Third stage: division into four.

FIG. 4.

Parasite ready to burst out.

MUMPS.

BY J. GORDON SHARP, M.D. EDIN.

IN the beginning of September, 1907, I had in my practice an epidemic of mumps which ran on without intermission till the end of March, 1908, when it ceased rather abruptly. This may have been owing to the fact that the epidemic had spent itself, aided by another important circumstance—namely, the weather suddenly changed to bright sunshine and absence of high wind. The lull, however, was only temporary, for in the last week of April, 1908, the weather suddenly changed once again and we had a heavy snowstorm, accompanied by biting north and north-east winds, so that women and children were confined to the house. The epidemic commenced afresh and did not finally cease till the end of May. Up to the middle of December, 1908, no fresh cases have been seen. In this second outbreak I had eight cases and as I calculated that medical men only see one-fifth of all the cases actually occurring this means 40 cases amongst the families who are nominally my patients. The epidemic affected all classes, from the very poorest to the comparatively well-to-do. In my experience of 16 years' practice it has been without exception the longest continued, the most severe, and the most widely spread with which I have had to deal. The experience gained has taught me that mumps is not the trifling disease which some people seem to regard it.

Some peculiarities of the epidemic.—The ages of the patients ranged from 17 months to 41 years. Three of the patients were adults—namely, two women (35 and 41 years of age respectively) and one man (aged 35 years). The man had had whooping-cough when he was 28 years of age. When convalescent from mumps his pulse was 60 in the upright posture. Generally speaking, the pulse was slow in all the patients, both in the acute stage and during convalescence. Only in one of the patients, and only for one day, did the temperature reach 104° F. As a rule it never reached higher than 101° or 102·5°. One of the patients, a girl, aged 17 years, was distinguished by the extent of the swelling and the long period of its duration. The illness started with a typical swelling of the anterior and outer aspects of the right parotid gland, and in two days this swelling had spread to the inner aspects of the gland, evidently pressing on the veins, for there was considerable œdema of the half of the neck and extending as far down as the clavicle. On the third day the left parotid became affected, and, although large, it never reached the dimensions of the right side. The swelling lasted for ten days and caused the friends of the patient considerable anxiety. If I had not been sure of the diagnosis I, too, should have felt concern, but the experience of this epidemic had taught me that severe and apparently alarming symptoms in mumps clear completely away. Although minutely inquired into I could find no evidence of affection of the breast, the pancreas, the inguinal glands, or of other parts likely to suffer in this malady. There was nothing wrong in the throat.

The disease generally attacked the whole of the children in the household. Some children were said to have suffered from a second attack but I cannot personally vouch for the accuracy of this statement.

Incubation period.—I tried to find out the average time of incubation but this was difficult to ascertain with any degree of accuracy, for the epidemic was so widespread that a child might happen to be in contact with many infected individuals. However, on several occasions I met with cases amongst children in which they could only have been infected within ten days or a fortnight. Thus, I should say the average time of incubation ranges from 10 to 14 days.

How long is a patient a source of danger?—I am inclined to think that a patient who has suffered from mumps may remain infected, and therefore a source of danger to others, for a much longer period of time than is generally believed. I have known one or two children of a large family to become attacked, while the remaining members of the family remained well for six weeks or even longer when another child contracted the disease, just as we had congratulated ourselves that the household was free from infection. Two striking examples of long-continued infection occur to me (see Case 1). Three children, the only juvenile members of a household living in a cottage shut off from all near neighbours, contracted the disease, the only signs being parotitis, with slight constitutional symptoms, and all got apparently rapidly well. Six weeks later one of them, a boy, got orchitis and another, a girl, eight weeks after the parotitis suffered from vulvitis and subsequent pancreatitis. Unless these children suffered a second attack, and I think this is hardly likely, they must have had within them the source of infection all these weeks. Case 14 may also have been one of long-continued infection.

Nature of epidemic parotitis.—If I were asked to clear my mind of all preconceived ideas derived from books and traditional teaching about mumps I should say experience taught me that it was (1) an acute infectious disease producing constitutional disturbance, depressing rather than stimulating the higher nerve-centres, as shown in the comparatively low temperature and slow pulse rate; and (2) that there might be no signs or symptoms beyond those just named, but that oftener than not the parotid gland was swollen and occasionally the breast, pancreas, testicle, vulva, and other parts were swollen and tender.

I have often seen one or more children of a household suffer from typical mumps while one or more children of the same family had general malaise without any evidence of swelling of the parts generally affected in mumps. I believe the latter had mumps but without the usual outward manifestations thereof.

I have frequently examined the throat and tonsils in severe typical cases of mumps in search for local redness and swelling or other signs pointing to a possible source of entry of offending material into the system but always with a negative result. I have in my own mind come to the conclusion that whatever the causal agent of mumps may be it finds its entry through the alimentary tract.

Inguinal glands.—These are occasionally tender and swollen.

Mastitis.—This is not a prominent symptom.

Head symptoms.—Pseudo-meningitis was observed in one case.

Severe abdominal symptoms.—The abdominal symptoms in mumps are often very alarming. There may be sickness and vomiting and blood may be vomited. The pain is often severe and this may be accompanied by collapse. The abdomen may be tense and tender to the touch. Sometimes a swelling is to be felt. The tenderness, swelling, tumour, or severe pain is limited to the left hypochondrium and to the epigastrium. This is a peculiarity of the affection and helps one in distinguishing it from other abdominal affections. I need hardly say these signs and symptoms point to an extension of the disease to the pancreas. Now and then there is a passage of large quantities of blood and fat droplets by the bowel, while at other times constipation is a prominent symptom. The first few cases I saw made me think of peritonitis but then the symptoms limited themselves to the areas I have named, and further the state of the pulse and temperature did not point to it.

Another point of interest was the rapidity with which alarming symptoms disappeared. Lastly, there was presented to my mind the possibility of one patient suffering from parotitis, while another patient of the same household or of another neighbouring household might suffer from pancreatitis and all due to one common causal agent. In other words, mumps may be represented in one patient by parotitis, in another patient by pancreatitis only, and as stated in another place a patient may have mumps without showing any glandular affection whatever. The pancreatic area marks the seat of pain and when acute symptoms subside a tumour can often be felt in this region.

Treatment.—In simple mumps in children I give five-grain doses each of the salicylate and bicarbonate of sodium well diluted with aerated soda water. I likewise tell the mother to give plenty of cold water or aerated water and no food unless the child asks for it. The salicylate relieves the aching of the neck muscles and gives sleep and comfort to the child. When pain in the abdomen is severe I give in children three minims of tincture of opium diluted to half a fluid drachm with glycerine and water every hour or even oftener as long as may be necessary. Here my object was to reduce volume as much as possible, for I found by experience that anything which distended the stomach even in a small degree increased the pain. I have known children refuse to take even a tablespoonful of fluid because of the pain it occasioned.

The present epidemic is largely represented by abdominal symptoms. Conditions of weather and locality may determine these points. In other places and during other epidemics mastitis, orchitis, pseudo-meningitis, and affection of the lymphatic glands may be largely met with.

Mumps is, speaking generally, a benign disease, hence when pancreatitis depends on this cause it is not highly fatal. This, I take it, is why all my cases of acute pancreatitis recovered.

ILLUSTRATIVE CASES.

CASE 1. *Parotitis, vulvitis, and pancreatitis in the same patient.*—On Oct. 23rd, 1907, I saw a girl, aged ten years, who was then suffering from a moderately severe attack of mumps, the parotid gland alone being affected. In a fortnight her brother, aged 12 years, contracted the disease, and a few days later the baby, aged 17 months, the only remaining juvenile member of the household, also contracted the complaint. I saw nothing more of them till Dec. 17th, that is, eight weeks after the girl and six weeks after the boy first showed symptoms of mumps. At this time the girl was suffering from vulvitis with pain on passing urine, evidently owing to some pelvic trouble. The boy was suffering from orchitis and got rapidly well and has remained well. The girl, however, was seized four days later—that is, on Dec. 21st—with sudden collapse. On examination I found there were swelling and extreme tenderness in the left hypochondrium and epigastrium, accompanied by constipation. The temperature was subnormal and the pulse was thready. The imbibing of a tablespoonful of fluid increased the pain and touching the swollen parts produced evident suffering. Movement increased the pain. The child absolutely refused to take anything except three minims of tincture of opium made up to half a fluid drachm with glycerine and water. This she asked for because she said it gave her so much relief. On the second day she was comfortable unless she took fluids or was moved or the parts were touched. She improved a little each day and by the fifth day all cause for anxiety was removed and she was able to take fluids without discomfort. On the seventh day I was able to palpate the abdomen, when I found a tumour in the epigastrium. Taking this together with the history of the illness I set it down as an enlarged pancreas. It was tender on palpation. On the ninth day after the onset of collapse the child was almost well.

It is interesting to note the long period of time that elapsed between the parotitis and the onset of the vulvitis and pancreatitis in this girl and between the parotitis and the appearance of the orchitis in the case of her brother.

CASES 2 AND 3. *Parotitis only in a sister: pancreatitis only in a brother.*—On Feb. 3rd, 1908, I saw a girl, aged 13 years, in a typical case of mumps, the parotid gland alone being affected. It ran the usual course without after effects. On Feb. 13th, or ten days later, I was called to see her brother, aged 11 years. He had been seized suddenly with intense pain (without vomiting) in the left hypochondrium and in the epigastrium. Shortly afterwards he passed by the bowel about five ounces of dark blood containing large droplets of fat. Later in the day he passed about ten ounces of dark blood and an appreciable quantity of fat droplets. Next day he again passed blood and fat. I may here add that I saw all the evacuations. The condition was so evidently one of pancreatic affection that I had the last evacuation examined by Dr. E. Allan Wilson, honorary pathologist to the Leeds Public Dispensary, and his report is as follows: "*Fæces.*—Fat is present in the specimen sent and also blood and undigested muscle fibres and connective tissue. No free bile pigments are to be found. Diagnosis: acute pancreatitis." I may add that the urine of this same patient reduced Fehling's solution. The further report is that the boy rapidly got well and never developed parotitis. The history is the same as in all the other cases of mumps showing alarming symptoms—namely, the rapidity with which these disappear. When the acute symptoms had passed away I examined the abdomen, but I could not make out any distinct swelling of the pancreas.

The question arises, Was the acute pancreatitis in this boy due to the same causal agent as the parotitis in the sister?

CASE 4. *Doubtful pancreatitis.*—As an offset to the foregoing cases I think it only fair that I should report the following. On Jan. 25th, 1908, I was called to see a girl, aged 10 years, living in the midst of a district in which mumps had been for over four months epidemic. The mother's story was that the child was suddenly seized half an hour before I saw her with pain which was referred to the upper part of the abdomen. On examining the child I found that the painful area was the left hypochondrium and the epigastrium on its upper part. The pain was accentuated by movement, by touching, and by drinking. Before my arrival she had passed by the bowel half a teacupful of dark blood and about two teaspoonfuls of thick, grey oily fluid. On the top of the blood dark drops of fat could be seen without being specially searched for. Unfortunately I did not at this stage have the evacuations examined microscopically. I ordered three minims of tincture of opium diluted to half a fluid drachm with glycerine and water every half hour till relief was obtained. This medicine gave the patient great comfort. It had to be continued for some days. The pain and swelling never left the parts I have named. Indeed, had the swelling shown signs of creeping downwards I should have felt much alarm and have had the benefit of surgical opinion and most likely the abdomen would have been opened. The further progress of the case is that for days dark, bloody stools were passed. In a week the stools became liquid and greyish, evidently containing pus. On Feb. 3rd, that is ten days after the commencement of the illness, I sent a specimen of the fluid passed by the bowel to Dr. W. Gough of the Yorkshire Pathological Laboratory, and his report runs: "*Fluid passed per rectum.*—The fluid contains great numbers of degenerate leucocytes, a few red blood corpuscles, and many bacilli and cocci. It is practically *pus* coming from an abscess of some duration and discharging by the bowel. There is no evidence of pancreatic origin; of course, the commonest site of such abscesses is around the appendix." The temperature at the beginning of the disease was subnormal. Later it rose to 102° F. for two days but never became higher and then it sank to normal. The pain and swelling were, as I have already stated, high up in the abdomen; there never was any pain or distension or dulness below the line limiting the upper abdominal areas. When convalescent, the child passed enormous quantities of urine which reduced Fehling's solution to a dark brown. She developed an enormous appetite which continued for two months. She never had any swelling in the parotid.

Despite the adverse pathological report this may have been at its start a case of acute pancreatitis for the pain and swelling were limited to the area occupied by the pancreas.

CASE 5. *Vomiting of bright red blood, later of digested blood; acute hæmorrhagic pancreatitis(?).*—On Feb. 1st, 1908, a boy who had no former signs or symptoms of anæmia nor any gastric symptoms was seized with pain in the pit of the stomach and almost immediately afterwards he vomited a large quantity of bright red blood. I saw him within half-an-hour of the beginning of the illness. He was pale in the extreme and almost pulseless but quite conscious. When asked if he had any pain he said that he had, and when asked where the pain was located he passed his hand over the pit of the stomach and over the ribs on the left side. The experience here was the same as in all the other cases—the limited area occupied by the pain and swelling and that area always being that covering the site of the pancreas. The blood which the boy had last vomited was of the coffee-ground type, but I was shown a bucket in which the blood first vomited was contained and this was bright red. The boy had been constipated a day or two previously to this illness but otherwise he was not particularly out of sorts. Like the other children whose cases I have reported he had been exposed to the infection of mumps, but he had never had any signs of parotitis. The further progress of the illness was uneventful. He was kept at rest and was given three-minim doses of tincture of opium in the manner which I have already related. He was allowed cold water if he wished; indeed, this was all he asked for. The vomiting was not repeated. At the end of a week the acute symptoms had subsided and I then examined his abdomen, and at the junction of the left hypochondrium and the epigastrum a distinct swelling could be felt. This was tender to the touch. It rapidly decreased in size.

Taken in conjunction with all my experience of the other cases occurring in the epidemic I should say that this tumour was an enlarged pancreas. The temperature never rose beyond 100° F.

CASE 6. *Mumps represented by primary pancreatitis succeeded by parotitis.*—On Feb. 22nd, 1908, I saw a girl, aged five years, whose history was, as related by the mother, that the members of the household had been kept awake during the previous night by the child crying and complaining of pain in the pit of the stomach, the term being employed in its widest sense. I asked the child to show me where the pain was and she passed her hand over the upper part of the abdomen from the epigastrium to the left side, and when I attempted to touch it the child winced. I asked the mother if the girl had had mumps but she said "No." The pulse was 90 a minute and the temperature in the armpit was 101° F. On the next morning pain was still complained of and the mother volunteered the statement that she had been kept awake during a good part of the night because of this. I may say that I did not prescribe opium in this instance but merely a saline mixture. I think my sin of omission shows the advantage of opium. On the following day—that is, 48 hours after the patient was first seen—the right parotid gland was observed to be swollen in its anterior and outer aspects. The pulse was now 80 a minute and the temperature was normal, while the swelling in the abdomen had gone down and there was now no tenderness. The child was small and thin, possessing small, non-resisting muscles, so that the abdomen could be examined with the greatest ease. I could feel a body somewhat tender when pressed upon, extending from the central point of the epigastrium and to the left for perhaps a couple of inches. It gave one the impression of being an inch in diameter. This, I believe, was the enlarged and tender pancreas. It could be felt for three days in succession. The parotitis followed the usual course. Within ten days altogether the child was well.

The next eight cases belong to the second outbreak of the epidemic and, taken as a whole, are not so remarkable as the foregoing simply because they are not selected but are merely a record of all the cases met with.

CASE 7. *Mumps in a woman, aged 35 years.*—An unmarried woman, aged 35 years, contracted an ordinary attack of mumps without complications in the last week of April, 1908.

CASE 8. *Mumps followed by collapse, abdominal pain, and polyuria.*—A girl, aged five years, and a member of the same household as the patient in Case 7, had a slight parotitis a few days later. This passed off apparently but a week after convalescence was evidently complete the child became suddenly collapsed, the condition being accompanied by vomiting and pain in the upper part of the abdomen. She complained of great pain on passing urine but there was no vulvitis. Later she passed great quantities of urine. In the second week following the onset of collapse diarrhœa set in and continued for a week and the region occupied by the pancreas was exquisitely tender. Convalescence was prolonged. The temperature was never high.

CASE 9. *Simple parotitis from the same household as Cases 7 and 8.*—On May 5th, 1908, a boy, aged eight years, had well-marked parotitis of both glands which disappeared under simple treatment and without after-effects.

CASE 10. *Pseudo-meningitis followed by parotitis in a woman, aged 41 years.*—On May 4th, 1908, a married woman, aged 41 years, of neurasthenic temperament, suffered, according to her own story, from pain over the vertex. Towards night the pain increased so much that she was unable to sleep. During the next day it abated a little but at night it became worse than ever and she sent for me. I saw her on the morning of the 6th. She then complained of great pain over the vertex and of stiffness of the muscles of the neck and of the muscles of the head in general. Photophobia was prominent and there was great irritability of the whole muscular system. I at once gave her five grains of bromural in hot milk. Later I learned that this had given her refreshing sleep. I also prescribed five grains of bromide of potassium and five minims of tincture of opium, to be repeated every two hours while the pain continued. On the next day the patient was better; on the following day (May 8th) the left parotid gland was found to be swollen; and on the 9th the right gland was enlarged. Thus to all appearance the pseudo-meningitis preceded the parotitis. The temperature was never above 100° F. and the pulse ranged from 66 to 70. On May 10th diarrhœa was present. I could find no enlargement of the pancreas in this case. Convalescence was not prolonged. The neurasthenic type may account for the pseudo-meningitis.

CASE 11. *Simple parotitis.*—On May 8th, 1908, a daughter, aged four years, of the foregoing patient, who slept with her mother, showed a typical double parotitis. The condition cleared up rapidly.

CASE 12. *Abdominal pain preceding parotitis.*—On May 9th a girl, aged seven years, began to suffer from severe pain in the upper part of the abdomen, and this continued with intermissions until the 15th of the month, when a typical double parotitis appeared, and then the child gradually improved and soon got well.

CASE 13. *Acute pancreatitis following mumps.*—On May 20th I was summoned to a boy, aged seven years, who as his mother told me had a few minutes previously to this come in from school and almost as soon as he entered the house had been seized with sickness and vomiting and pain in the body, with pallor of the face and blueness of the lips. I saw him within a few minutes of the seizure and was able to confirm this description. His temperature in the armpit was 104·5° F. and the pulse was small and 132 a minute. The upper part of the abdomen was distended and when I asked where the pain was the boy placed his hand over the left hypochondrium and epigastrium. The parts were evidently tender and no attempt was made at examination beyond stroking the surface. I enjoined quiet, hot flannels to the tender parts, with one and a half minims of tincture of opium every hour—made up to a bulk of one teaspoonful by means of glycerine, tincture of cardamoms, and water. If the boy asked for any drink I told his mother to give nothing but cold water. On inquiry into the history of the illness I was told by the mother that exactly 15 days before the present attack he had begun to suffer from mumps. The swelling of the parotids had lasted for five days. My anxiety was now relieved for I knew that the abdominal symptoms most likely were due to acute pancreatitis following on mumps, and I gave a favourable prognosis. On the next day the temperature was normal and the pulse was 84. The bowels had been moved but nothing special was noticeable in the motion. There was still pain in the area covered by the pancreas. On the following day the temperature was normal and the pulse was 80. Some blood was said to have been passed in a motion but this I did not see. Pain was still complained of. On the next day the temperature was normal and the pulse was between 80 and 90. The mother said that the boy had had another motion and that it was green, with blood and oil in it. (He had had no castor oil.) This I saw for myself, so that the evacuation contained drops of fat on the top with blood and evidently bile—the green described by the mother. I tried to examine the pancreas but the muscles became so rigid that I was baffled. From this time onwards the patient gradually improved. The urine contained no sugar when examined by Fehling's solution.

CASE 14. *Epigastric pain, bleeding from the nose; mumps five weeks previously.*—On May 30th I was called to see a girl, aged ten years, with the history that on the previous day she had started with pain in the epigastrium and excessive bleeding at the nose. These abated somewhat but were repeated on the day of my first visit. The pulse was 90 and the temperature in the armpit was 99·8° F. The mother said that five weeks previously the child (as well as all the other four children of the family) had suffered from mumps. I prescribed three minims of tincture of opium, to be repeated every two hours till the pain was relieved. On the following day the bleeding from the nose had stopped and the pain in the epigastrium was much relieved. The child got well in less than a week.

If one were to summarise, the following points would appear to me to be worthy of special mention. 1. Mumps is not a trifling affection. 2. The comparative frequency with which the pancreas is affected. 3. The suddenness with which abdominal symptoms may appear and the equal rapidity with which evidently serious symptoms pass away. 4. The area occupied by the swelling and tenderness in abdominal cases—namely, the epigastrium and left hypochondrium—that is the area occupied by the pancreas. 5. The comparatively slow pulse and low temperature. (These may help one in distinguishing it from peritonitis, &c.) 6. The long period elapsing between the parotitis and the vulvitis and the onset of pancreatitis in some of the cases (poison retained in the tissues). 7. Pancreatitis may be the first manifestation of mumps. 8. The possibility of pancreatitis replacing parotitis in mumps. 9. Mumps may exist

in a patient without affection of any gland so far as one can see. 10. Acute parotitis is not a synonym of mumps, for mumps may be present without any apparent affection of the parotid gland.

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Leeds.

Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE BILIARY CIRRHOSIS OF CHILDREN, OTHER WISE KNOWN AS "INFANTILE LIVER."

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FOR many years a peculiar disease of the liver of infants accompanied with fever and attended with a high mortality has been recognised in India (Bengal). The morbid anatomy and pathology of this disease were well described by Major J. B. Gibbons, I.M.S., in 1891, who considered it to be a form of biliary cirrhosis and suggested that the term "intercellular cirrhosis" would be appropriate, as there occurred a primary development of fibrous connective tissue within the lobules between the liver cells. The other organs of the body seem unaffected except the kidney, which shows marked degeneration, and shedding of the epithelium of the tubules. The usual post-mortem appearances were œdema of the feet and legs and generally of the face and hands and a small quantity of fluid in the abdomen. All the tissues of the body are bile-stained. In the earlier stages the liver is enlarged, but later it becomes small. There is no perihepatitis but the liver substance is tough and the cut surface granular. The liver cells are much altered, many being destroyed and others converted into masses of granular débris. In the interlobular bands of connective tissue many bile-ducts are found. The intercellular fibres are not applied closely to the degenerated cells but form a netwook in the spaces of which the degenerated cells lie. It was suggested that the disease is due to an irritant which primarily attacks the liver cells but which also leads to proliferation of the connective-tissue elements. The proliferation of the bile-ducts is not so easily explained, but it was suggested by Paltang to be a curative process in which a regeneration is brought about by a multiplication of bile-ducts from which masses of liver cells were formed. The disease is not due to alcohol, there is no evidence of syphilis, and the pathological changes are quite different from the liver enlargement which follows malaria.

The disease is almost entirely limited to children between 6 months and 2 years of age. The onset is insidious. Some families seem liable to the disease. It occurs amongst rich and poor but is probably less common amongst Mahomedans than Hindus. It is as common amongst infants fed with other milk than that of their mothers. The disease varies in its duration, sometimes lasting a month only, and at other times for perhaps two years. Generally the first symptom noticed is enlargement of the liver, but early symptoms are nausea, vomiting, sallow complexion, and slight fever. The child loses its appetite, becomes irritable, develops thirst, and becomes distinctly feverish, especially towards night. The liver enlargement progresses and may become very extensive. Some tenderness over the liver is detected. In the later stages jaundice sets in and the child is markedly ill. Œdema occurs also in the later stages. There is a deficient excretion of bile, the stools being clayey and whitish, but the urine is deeply stained. The fever seems to increase with the disease. The prognosis is extremely unfavourable but it is impossible to estimate the case mortality as there are no trustworthy figures available. The disease is said to be common in Madras and it has been seen in Bombay. The clinical course of the disease was well described by Dr. Jogendra Nath Ghose in the Transactions of the First Indian Medical Congress (1894).

Since 1894 careful inquiries (in the absence of medical certificates) have been instituted in Calcutta into the causes of all deaths, and the prevalence of this disease has been clearly shown. The symptoms and course of the disease shown by later inquiries confirm the early descriptions. I am not aware, however, that anything further has been done to explain its pathology or to discover its origin.

We had in Calcutta in 1907 no less than 636 deaths of children from this disease. Of this number 92 only were under 12 months of age. 138 only were over two years of age. The great bulk of the cases—viz., 64 per cent.—died at ages between one and two years. The mortality amongst Hindu children is much greater than amongst Mahomedans, but male and female children are about equally attacked. I append a table showing the details of our statistics.

Infantile Liver for 1907.

Ages.	Hindu.		Mahomedan.		Total.
	Male.	Female.	Male.	Female.	
Under 3 months ...	2	—	—	—	2
,, 6 ,, ...	14	7	2	2	25
,, 9 ,, ...	12	10	3	4	29
,, 12 ,, ...	15	7	6	8	36
,, 15 ,, ...	52	44	19	12	127
,, 18 ,, ...	14	12	1	4	31
,, 21 ,, ...	83	71	11	9	174
,, 24 ,, ...	29	30	7	8	74
Over 24 ,, ...	55	45	20	18	138
—	276	226	69	65	636

It is important in connexion with the theory that this disease is brought about by absorption of toxic material from the bowels to note that diarrhœal diseases (more particularly acute and chronic enteritis and the complaint corresponding to summer diarrhœa) are less common in Calcutta than in England, the mortality from diarrhœal disease being 21 per 1000 births in Calcutta, as against 31 per 1000 births in England and Wales (1904). Considering that the disease occurs in sucklings, in infants artificially fed, and in children between one and two years of age who are given all sorts of food, it is difficult to ascribe the disease to errors of diet. It is generally considered to be a progressive disease and once started it is almost always fatal. Taking all things into consideration, we can most reasonably conclude that it is a parasitic disease, but whether microbic in origin or due to larger forms there is no evidence to show.

Calcutta.

CLINICAL NOTES OF TWO CASES OF PUERPERAL FEVER TREATED BY CURETTAGE AND APPLICATION OF PURE IZAL.

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THE following cases of puerperal fever seem to indicate the value of early curettage combined with the application of undiluted izal in order to prevent re-infection through the raw surface. In each case labour was uncomplicated, the after-birth was complete, and nothing had been introduced into the uterus.

CASE 1.—A woman, aged 34 years, a multipara, developed a temperature of 102·4° F., with a pulse of 108, on the third evening after confinement, the lochia remaining unchanged. Aperients and sedatives failed to reduce the fever, which reached 103·2°, with pulse 100, on the fourth evening, and a slight rigor occurred. The uterus was explored with the finger and was found to be free from any appreciable trace of after-birth or clot. An intra-uterine douche of lysol 1 in 320 was given, together with the following treatment: antistreptococcic serum (B. and W.'s polyvalent) ten cubic centimetres and one intra-uterine douche daily; frequent doses of liquor ferri perchloridi and alcohol; and vaginal douches of biniodide of mercury 1 in 2000 four

times a day. In spite of this the temperature remained constantly over 102°, and on the sixth evening it was 103°, with pulse 106 and shivers, the lochia being scanty but not in the least offensive. The uterus was again explored under chloroform and some small polypoid excrescences were scraped away with the finger-nail, and a lysol douche at 120° was given as the bleeding was rather brisk. Under the microscope the scrapings showed no trace of chorion or chorionic villi but consisted mainly of decidua (its glands showing inflammatory changes), some fibrinous clot, and a few scattered shreds of muscle-fibre. On the following morning the temperature was 99·6°. On the seventh evening it went up to 101·8° and, assuming a hectic character with morning remissions, it gradually rose to 104·4°, with pulse 128, by the eleventh day. The uterus was now thoroughly scraped with a blunt curette and the whole of its lining was carefully swabbed with pure izal. The temperature dropped to 98·6° but mounted again to 104·4° on the following evening. However, from this time onwards the fever rapidly decreased, the shivering fits ceased, and recovery was only interrupted by two relapses of the temperature—one to 104·4° on the fourteenth day (probably due to emotion caused by a family excitement), and the other to 101·8° and 103·2° on the sixteenth and seventeenth days respectively (when solid food was taken for the first time). After this there was no more fever and recovery was complete.

CASE 2.—A woman, aged 32 years, a multipara, was attended by the same midwife and pupil in the interval between the confinement of the patient in Case 1 and the appearance of puerperal fever. She developed a temperature of 102°, with pulse 100, on the third day after confinement. The bowels and breasts were rectified but after a morning remission to 99·6°, the temperature on the fourth evening ran up to 104·4°, with pulse 130 and a rigor. The lochia were decreased in amount, were not offensive, and everything pointed to an infection similar to that of the previous case. Without delay the patient was anæsthetised and the uterine cavity was explored, but no trace of secundines was palpable. The walls were thoroughly scraped with a blunt curette (the blade guarded by a forefinger) and the raw surface was swabbed with pure izal. After the operation the temperature fell to 99·6°, with pulse 88, and there was no recurrence of the fever. Vaginal douches of biniodide of mercury 1 in 2000 (followed by sterilised water) were given for a few days as a precautionary measure and recovery was uninterrupted.

In neither patient was any lesion found in the vaginal canal, or any tenderness or thickening in the pelvic fascia or peritoneum.

Worcester.

A NOTE ON A NEW METHOD FOR THE REPAIR OF PERFORATION OCCURRING DURING THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM.

BY F. D. GULLIVER, M.D.,

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WHEN examining the nose of a patient who has undergone a submucous operation on the nasal septum a perforation is not infrequently discovered. Such an occurrence is not only a source of some annoyance and inconvenience to the patient but is always an eyesore to the operator, although he may not be in fault. Indeed, in the case of a patient whose mucous membrane has been destroyed on one or both sides by the removal of a spur or by an ulcerative process, in performing the submucous operation on the nasal septum it is often impossible to avoid a perforation. Some few months ago when resecting a septum with an extreme angular, longitudinal deviation I found when proceeding to put the flaps of mucous membrane together that both sides had been perforated and that there was a hole in the resulting septum. There being an excess of mucous membrane in the flap on the convex side, I decided to endeavour to utilise part of it for the repair of the septum. Accordingly I cut off a piece of mucous membrane, in size about a quarter of an inch square, and after carefully cleansing with a warm normal saline solution I interposed the excised piece between the flaps of mucous membrane in such a manner as to cover completely the perforation. The packing was allowed to remain in the nose for 24 hours. When the packing was removed I found that both flaps approximated and that the grafted mucous membrane covered the hole perfectly. The after-treatment consisted merely of cleansing the nasal cavities with a weak alkaline solution. I saw the patient three months after the operation; the grafted mucous membrane was in the same position in which it had been originally placed and had united with the mucous membrane of both sides of the septum. Three months ago I had another successful result in a similar case. What really occurred in both the above cases was a union of the two perichondriums on the one side and a union of mucosa and perichondrium on the other side.

New York.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Dr. James Mackenzie's Ink Polygraph.

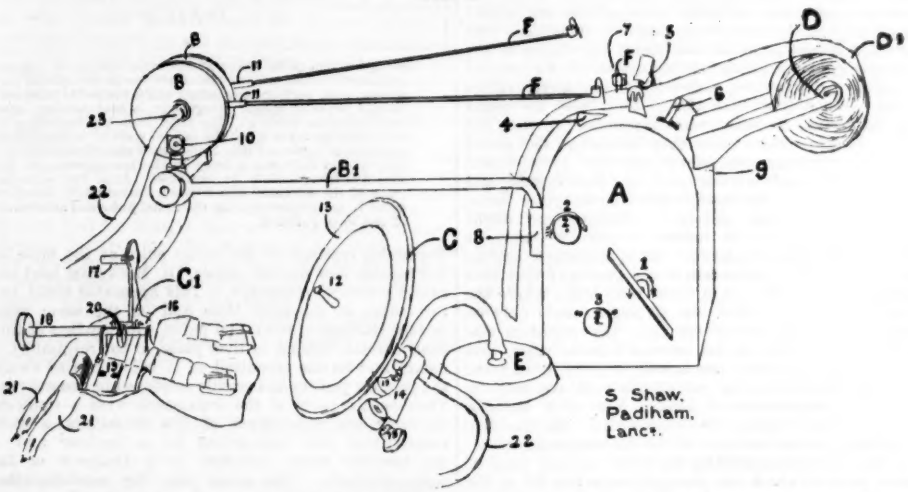
A MEETING of this section was held on Jan. 8th, Sir THOMAS BARLOW, the President, being in the chair.

Dr. JAMES MACKENZIE demonstrated the use of his Ink Polygraph for taking and interpreting graphic records of the movements of the circulation. He said that the necessity for obtaining graphic records of the movements of the circulation was now universally recognised, but there had hitherto been a difficulty in obtaining a suitable instrument. Apart from the trouble of blackening and varnishing tracings, the present methods were not convenient, especially when long tracings were required. The ink polygraph met the necessary requirements as it enabled tracings to be taken of any length, and after a little experience it was very easy to use. In investigating any movement caused by the circulation it was necessary to record at the same time some standard event the position of which in the cardiac cycle was fixed and determined. Hence it was necessary that two events should be simultaneously recorded—the one to be investigated and the standard movement. The best and most trustworthy standard movement was the arterial pulse, radial and carotid; with the ink polygraph those movements could be recorded by one lever while the movement to be investigated was recorded by the other lever. Other movements, as those of the respiration, could also be recorded. The most important parts of the instrument (see Fig. 1) were: the body A, containing the paper-rolling and time-marker movements. The writing tambours BB, with supporting bar Bl. Wrist tambour C, with attachment Cl, for strapping on to wrist. Paper-roll bracket D. Paper-roll Dl. Cup receivers EE. Pens FFF. The body A had also a few other details requiring description. At the end of the machine were three keys. The large one (1) was for winding the paper-rolling movement. The top smaller stud-key (2) for winding the time-marker movement and the bottom one (3) regulated the speed of the paper passing through the rollers, the direction required being indicated by the letters F and S (fast and slow). On the top were the writing table (4), friction rollers, and tension spring (5) for passing along the paper. Behind those, to the right, was the start-and-stop lever (6) and to the left the fork (7) carrying the time-marker pen F. That fork vibrated at the rate of 300 per minute, an equivalent to one-fifth of a second. Attached to the case were two sockets. The square one in front (8) was for holding the writing tambours, whilst the other behind (9) supported the paper roll bracket. The writing tambours with their pen levers (11) were fitted with friction joints (10), enabling the pens to be adjusted to any desired position on the paper or lifted entirely away when not writing. The pen levers had each a small spring at the end which pressed on and held the pens in the grooves cut out to receive them. The rubber membrane was held in position by the ring which encircled it. Both tambours had inlets (23) for attaching connecting tubes (22). The wrist tambour C was in two parts. First the splint (16) which was strapped on the wrist was fitted with spring tongue and button (19), that rose and fell with the action

of the pulse; also an eccentric (20) and regulating screw (18) for increasing the resistance on the artery. Second, the tambour with supporting arm (14), rubber membrane (13), and compression disc and peg (12). That portion was not placed in position until the artery had been correctly located and the maximum movement of the spring and pulse button obtained. The two parts were held together by the clamping screw (15) in the supporting arm binding on to the pillar (17). The tambour itself was also secured by binding screw (17). The paper roll bracket D had a roller running in slots at the ends of the bracket arms. That roller was kept in position by two springs fixed on the bracket arms having semicircular notches engaging the rolling pivots. When putting on a roll of paper the roller should be drawn straight away from the brackets, which action causes the springs to be pressed under the pivots, thereby releasing the roller. After placing on the roll the roller should be pressed back into position. The

After full attention had been given to the foregoing the splint should be firmly strapped on to the patient's wrist, the artery located, and the small eccentric on the pulse button spring adjusted until the best movement was obtained. Next the arm carrying the wrist tambour should be attached on to the peg provided in the pillar fixed to the splint. The arm should be secured with the binding screw, the tambour dropped until the compression peg on the rubber membrane rested upon the small plate above the pulse button, and that secured also. If those instructions were properly carried out a movement would be given to the pen. If the movement were not satisfactory, the regulating screw should be again adjusted on the splint so as to get the greatest excursion. Particular notice should also be taken that the hand was thrown well back to bring the artery as prominent as possible. When the desired movement had been obtained, the patient's wrist should be laid across the arm of

FIG. 1.



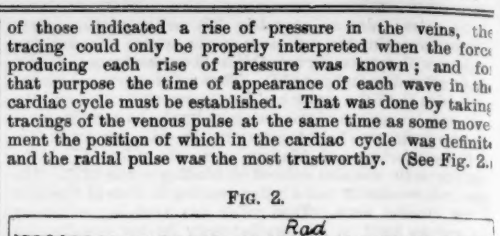
receiver E was a shallow open cup with a nipple passing out of the roof to which an indiarubber tube was attached, the other end of the tube being attached to the tambour with the writing levers. When placed over any pulsating part in such a manner that no communication was made with the outer air the movement within the receiver was conveyed to the tambour and writing lever. The pens FFF had each small reservoirs and writing pins. Those pins were grooved on each side to conduct writing fluid from reservoir to point of pin. The fluid used was a composition of one drachm of methyl blue to 16 ounces of water. Ordinary writing inks were objectionable owing to the corrosive action on the pens. Those pens should be kept scrupulously clean and the ink free from dust. In order to fit up the apparatus for work the machine was placed on a table or stand, both movements were wound up, and the tambour bar was fixed which carried the writing tambours into the square socket attached to the front of the case. Next the paper roll bracket was fitted into the socket at the back of the case. Then the roller was drawn out and the paper roll put on. Care should always be taken to have the paper unrolling from the top on to the machine and not to come up from underneath. The end of the paper should be passed through the friction rollers and the clockwork should take it forward until it overhung the front edge of the writing table. The pens should then be placed in their respective positions, the writing pens in pen levers on the tambours and the small time-marker pen on the vibrating fork. The pens should be lifted away from the paper, so as to observe the movement when adjusting for the maximum excursion. The pens should all be charged up with fluid and the cup receiver and tambour connected to the writing tambours with the rubber tubes. The wrist tambour should always be connected up with the writing tambour nearest to the supporting bar. The reason for that was that the pen lever on that tambour was allowed a greater leverage to amplify the small displacement of air imparted to the transmitting tambour by the radial pulse.

a chair or other support to keep the hand in proper position, as the drooping of the wrist or closing the hand had a detrimental effect on the action of the pen. If a synchronous tracing were desired the cup receiver should be adjusted until the movement to be investigated transmitted a suitable action to the other pen, after which the pens might be brought down to the slightest touch on paper and the machine started off. A little experience would be necessary in the successful manipulation, but if those instructions were strictly adhered to a fairly decent result was absolutely certain. It was important to remember to keep the pens well cleaned and to avoid using ink which had become dirty and thick from exposure. If the pens failed to flow properly they should be rinsed well with water, at the same time brushing out the grooves. Strict attention should be paid to the tambours being perfectly air-tight, as the slightest leakage caused loss of movement on the pens. To test for that a little air should be blown into the tambour, then the rubber tube stopped up with the finger, when, if air-tight, the pen would maintain its position, otherwise it would gradually fall to its zero line owing to the escape of air. When that defect appeared a new membrane should be substituted. Should the faulty membrane be one of the writing tambours the defect should be remedied in the following manner. The pen lever-bracket should be detached from the tambour by taking out the screw which held it to the small block at the back of the tambour. Next the ring encircling the membrane and flange of tambour should be drawn off. Then lay across a new piece of rubber, without stretching it, and again the ring should be pushed on to its original position; afterwards trim off all superfluous rubber with a sharp knife, drawing it round the tambour edge behind the ring. Next replace the pen lever-bracket, having previously removed all traces of old rubber; then touch the small disc with a little gum or seccotine and bring down the lever gradually, allowing the disc to fall squarely on to the membrane so as

to find its proper working position. Test in the manner stated for leakage and if air-tight it should again be considered in working order. The renewing of the membrane on the wrist tambour needed no description, as that was simply tied on to the groove, afterwards cementing the compression disc with the stud perfectly central so as to insure finding its proper place when dropped on to the pulse button. When running the paper through very slowly the spring must be wound up to the top, as that method gave a more uniform speed. Turning the regulating screw too far in the "slow" direction stopped the machine entirely, and it might sometimes happen that the machine failed to start to the response of the starting lever. Should that at any time be the case the regulator should be turned in the direction of "fast" when it would again commence to work.

Dr. Mackenzie, in the course of his demonstration, said that the consideration of the circulation had so far been mainly concerned with the effects of the contraction of the left ventricle. When the apex beat was studied or the characters of the arterial pulse were analysed their purview was limited almost entirely to the doings of the left ventricle. The arterial pulse indeed gave them a direct knowledge of the left ventricle's action during but a portion of the cardiac cycle—namely, during the period when the aortic valves were open. When they were closed they were no longer directly cognisant of what was happening in the left ventricle. In the venous pulse they had often the direct means of observing the effects of the systole and diastole of the right auricle and of the systole and diastole of the right ventricle. The venous pulse therefore presented a greater variety of features and might manifest variations due to disease which the study of the arterial pulse failed to reveal. In examining a patient for pulsation in the jugular vein it was generally best that he should lie down, though in some rare cases, where the veins were greatly distended, the pulsation could only be recognised when the patient sat up. The pulsation was most commonly limited to the internal jugular veins, and those veins, lying alongside the carotid arteries, were never visible, being covered at the root of the neck not only by the skin and sterno-mastoid muscle but by a variable quantity of adipose tissue; the venous pulse was therefore recognised only by the character of the movements communicated to the structures covering the vein. In that form of the venous pulse in which the principal wave was due to the auricular systole the sudden collapse of the tissues covering the vein was more striking than the protrusion. If they further carefully timed that collapse it would be found to be synchronous with the arterial pulse. The pulse in the internal jugular vein was often mistaken, even by experienced observers, for "beating of the carotids." But the carotid pulse was always abrupt and sudden in its protrusion of the covering tissues and gradual in the shrinking. Furthermore, when they found a small radial pulse and a large pulsation in the neck they might safely conclude that the neck pulsation could not be carotid unless in very exceptional circumstances (as aneurysm). When the pulsation was in the more superficial veins, as the external jugular, facial, or superficial thoracic veins, the collapse of the vein synchronous with the carotid pulse was usually easy of recognition. In another form of venous pulse, where the pulsation was due to the ventricular systole, the engorgement of the veins was usually so great, the arterial pulse so small, and the cardiac mischief so evident, that the recognition of the venous pulse was comparatively easy. Usually the movements of the vein were best recorded with the patient lying down, the shoulders slightly raised, and the head comfortably supported by a pillow and turned slightly to the right in order to relax the right sterno-mastoid muscle. The receiver was placed over the jugular bulb immediately above the inner end of the right clavicle, with just sufficient pressure to shut off the interior of the receiver from the outer air. The receiver might have to be shifted about to get the best movement. Sometimes better tracings were got higher up in the neck or from the left side. In great engorgement of the veins it might be possible only to get a tracing when the patient was sitting up. The continued action of the sterno-mastoid in laboured breathing might prevent a tracing of the jugular pulse being obtained. The movements of the venous pulse were usually more numerous than those of the arterial, and in the tracings a number of waves were present. As each of those indicated a rise of pressure in the veins, the tracing could only be properly interpreted when the force producing each rise of pressure was known; and for that purpose the time of appearance of each wave in the cardiac cycle must be established. That was done by taking tracings of the venous pulse at the same time as some movement the position of which in the cardiac cycle was definite and the radial pulse was the most trustworthy. (See Fig. 2.)

FIG. 2.



Tracings of the radial taken at the same time as the jugular and carotid. The waves *a* and *a'* are due to the auricle and appear with perfect regularity, while the radial pulse and carotid (wave *c*) appear irregularly—a beat missing after each auricular wave *a'*. The time from the beginning of the auricular wave *a* and the carotid wave *c*, is more than one-fifth of a second (the time-record marks one-fifth of a second) and indicates a delay in the transmission of the stimulus from auricle to ventricle. After the auricular wave *a'* the stimulus fails to reach the ventricle, therefore there is an intermission in the radial pulse and an absence of the wave *c* after *a'*.

For taking tracings of the radial pulse at the same time as the jugular and carotid pulses, Dr. Mackenzie used what he called a clinical polygraph. This apparatus could be used for taking at the same time and on the same recording surface tracings of the radial pulse, with tracings of the apex beat, carotid, venous, or liver pulse, or the respiratory movements, and its size permitted of it being carried about with the greatest facility and readily employed in general practice. The essential parts of the instrument were a small cup for receiving the impressions of the pulsations, a tube for transmitting the impressions to a tambour and lever, the tambour being attached to a Dudgeon or Jacquet sphygmograph. The small cup for receiving the impressions referred to as the "receiver" was simply a small shallow vessel, circular in shape, one and a half inches in diameter and half an inch in depth. The open mouth was applied over the pulsating part so that its edges were closely adapted to the skin and all communication with the outer air was excluded. From the roof of the receiver rose a narrow pipe half an inch in length. To that pipe was fitted an indiarubber tube from three to four feet in length, the other end of which was connected with the tambour. A modification of the receiver was required when tracings of the liver pulse were taken. The tambour supported a writing lever about six inches in length. From the under surface of the tambour a pipe protruded, which was connected by the indiarubber tubing with the receiver. Screwed tightly to the bottom of the tambour was a stem six and a half inches in length projecting outward parallel to the under surface of the tambour. Half an inch of the other extremity of the stem was bent almost at right angles and this portion fitted into a slot in the upright stem that supported the moveable lever of a Dudgeon's sphygmograph. When the tambour arrangement was adjusted to the sphygmograph the tambour rested with its moveable surface vertical, so that the writing lever moved horizontally. For the purpose of adjusting the point of the writing lever to any desired place on the recording paper the following movements were available: the point of the lever could be approximated to, or withdrawn from, any desired point by means of a sliding arrangement, where the stem consisted of two parts clasping one another. The writing point could be made to move in the horizontal direction, so as to write at any desired level on the paper, by means of a joint which moved stiffly and retained the position in which it was placed. Finally, by rotating the tambour at a joint formed where the stem was fixed to the under surface of the tambour the lever could be raised out of reach during the adjustment of the sphygmograph to the pulse, and brought back and allowed to touch the surface of the blackened paper

with sufficient delicacy to permit its movements to be accurately recorded without being restrained by too close pressure. By means of these arrangements the lever could be moved with great facility and accuracy in a vertical and a horizontal position, as well as made to approach or recede from any given point. By that method any movement could be recorded at the same time and on the same paper as the radial sphygmograph. One could make the tambour lever write directly above or below the writing lever of the sphygmograph, or when the movements were large a little behind, so that the two levers did not come into contact during their excursions. Perpendicular lines to show the relative time of the two tracings were obtained by allowing the lever to make distinct marks on the paper before starting or after stopping. With a pair of compasses the relative time of any event could be accurately gauged.

Dr. P. M. CHAPMAN said that the methods demonstrated by Dr. Mackenzie brought physiology more closely into touch with clinical medicine, and Sir LAUDER BRUNTON declared that they had opened up a new field of investigation which would go far towards elucidating the diagnosis and treatment of cardiac disease. He (Sir Lauder Brunton) would certainly order one of the instruments.

After Sir JOHN BROADBENT had spoken in regard to the interpretation of some of the tracings shown,

Dr. W. P. HERRINGHAM said that Dr. Mackenzie had shown them new methods by means of which they were enabled to investigate cardiac diseases in a way that had never been done before; the demonstration that night had given them food for thought that would last them for years. Considering the fact that Dr. Mackenzie had done all this original work in the midst of a busy general practice he (Dr. Herringham) could only express not merely his admiration but his wonder at the results.

After Dr. T. LEWIS, who had assisted Dr. Mackenzie in the demonstration, had spoken, Dr. MACKENZIE replied and the proceedings terminated.

MEDICAL SOCIETY OF LONDON.

Mediastinal Growths.—A Fatal Case of Lymphocythæmia (Lymphatic Leukæmia).

A MEETING of this society was held on Jan. 11th, Mr. CHARTERS J. SYMONDS being in the chair.

Dr. R. CECIL B. WALL read a paper on Mediastinal Growths. He said that he included all tumours of a sarcomatous nature arising from the tissues of the mediastinum or of the hilum of the lung in one group. He was not, however, convinced that all the cases found in that group were really of a sarcomatous nature. The cases which he had grouped together as sarcomatous or lympho-sarcomatous were 34 in number. In 26 of them the diagnosis had been confirmed by competent pathologists after microscopical examination; in the remaining eight the condition found at the post-mortem examination seemed to justify the diagnosis, though the histological examination was not complete. Of the 26 certain cases 23 were males and three were females; of the doubtful cases six were males and two were females. That proposition did not bear out the statement made by Sir R. Douglas Powell that sarcomatous growths were commoner in females than in males. He did not suppose that his figures represented the true proportion of sex coincidence; they might be explained by difference in accommodation provided for the two sexes in the hospital or the greater difficulty in obtaining leave for post-mortem examinations in the case of females; however, they did draw attention to the fact that it was not wise to attach much importance to the sex in differential diagnosis. The figures showed that the maximum incidence was between the ages of twenty and sixty. In differential diagnosis the age of the patient might help to exclude aneurysm; apparently no age could be taken to exclude mediastinal sarcoma. The duration did not seem to bear any direct relationship to the age though the general impression from the study of the cases was that the disease tended to run a shorter course in the younger patients. In the 32 cases in which he found records of the clinical history in only one were pulmonary symptoms entirely absent. Cough and dyspnœa were present in 30 out of 32 cases; the cough was usually irritating and associated with scanty sputum; sometimes it was paroxysmal and very distressing; occasionally it had a brassy quality. The dyspnœa in the earlier stages was only apparent on exertion; later it might become paroxysmal or continuous and distressing; stridor due to pressure on the trachea and implication of the laryngeal nerves was noted in several cases, but as a rule it was a late symptom. On the whole, dyspnœa seemed to be the most characteristic pulmonary symptom of mediastinal sarcoma. In 17 out of the 32 cases hæmoptysis was recorded at some period in the illness but in every instance the note adds that the amount of blood expectorated was small and not frequently repeated. Pain was recorded as a symptom in 15 out of the 32 cases. It was generally referred to the chest and apparently was most frequently due to pleurisy; occasionally it was caused by implication of the thoracic wall in the growth. It was seldom so severe or agonising as the pain met with when the growth was of a nature more likely to produce metastatic deposits in the bones. He did not think that pain could be regarded as a very important symptom of mediastinal sarcoma. Of the pressure symptoms the most important were those resulting from venous obstruction. The records showed that venous distension was noticed in 14 cases; that sign was of importance in the differential diagnosis from aneurysm. It was mentioned because of the close connexion with the symptoms of œdema. Dysphagia was found in eight cases; that might be produced by pressure of the growth upon the œsophagus or by implication of the vagus nerve; it was difficult to distinguish the exact cause unless a full-sized œsophageal bougie had been passed into the stomach to show that there was no mechanical obstruction. He was not aware that that test was applied in any of the cases. With regard to the signs by which the diagnosis of mediastinal sarcoma was established in those cases it was rather remarkable that in only six out of the 32 was there direct evidence of a solid mass in the superior mediastinum. In 12 cases records of the radiographic examinations showed that a growth was thus recognised seven times; in five cases the results of the radiography were ambiguous. In 13 cases the physical signs suggested consolidation of the lung. In 15 cases the examination of the chest revealed signs of pleural effusion; in six of those the fluid was found to be blood stained, generally of a brownish colour, in five it consisted of clear serum, and in one it was purulent. In the last case the necropsy showed that the collection of pus was in the lung substance and had resulted from softening of the growth. In the remaining three cases the nature of the fluid was not recorded. He included under carcinoma of the mediastinum all those cases in which the growth after microscopic examination had been pronounced to be carcinomatous. In eight out of eleven cases the growth was supposed to have started in or near a main bronchus; in two the primary site was regarded as doubtful; and in one the growth was supposed to have originated in the upper lobe of the lung. Seven of the cases were in men; four were in women. The age incidence showed that all save one occurred in persons of 39 years of age or more. The prominent symptoms in these cases seemed to be pain due in most instances to secondary deposits in bones or to the implication of nerve trunks. Excluding the case of the young girl pain was recorded as troublesome in nine out of ten cases. Of the pulmonary symptoms dyspnœa seemed to be the most frequent, occurring in seven of the 11 cases. That was probably due to the frequency of bronchial obstruction. Cough was troublesome in only four cases; hæmoptysis was noted in only three. In three cases no pulmonary symptoms were present; though one of those was recorded to have coughed up a stinking lump while in hospital it was expressly stated that he had no other symptoms suggesting intra-thoracic disease. Hoarseness was noted in two cases and in two dysphagia was present. The signs found on examining a patient suffering from intra-thoracic carcinoma seemed to be less definite than those found in cases of sarcoma. In most of the cases the secondary symptoms and signs attracted most attention. He included among mediastinal new growths those found in association with Hodgkin's disease. Dr. Wall then recounted the details of three cases of mediastinal new growths in association with lymphatic leukæmia. The next group

included five cases in which the diagnosis made at the post-mortem examination was of primary malignant disease of the pleura. Unfortunately in only two of the cases was the result of the microscopical examination of the tumour recorded. He had notes of 18 cases in which secondary growths were present in the lungs, the primary growth being elsewhere. In six cases there had been a primary sarcomatous growth in a long bone and in five amputation had been performed. Five of the six patients were females. The ages varied from 15 to 35, but five of them were under 22 years of age. A study of those cases of secondary intrathoracic growths served to show, what, of course, was well known, that extensive growths might exist in the lungs without either symptoms or signs. It also showed that the deposits were more often in the lungs than in the mediastinum and that the pleura was not uncommonly affected. He emphasised the importance which should be attached to such symptoms as dyspnœa or hæmoptysis and such signs as those of pleural effusion in patients who were known to have suffered from sarcoma or cancer in another part of the body. In conclusion, Dr. Wall said that sarcoma of the mediastinum was a disease chiefly of the middle period of life. It was generally associated with pulmonary symptoms of which cough and dyspnœa were the chief and hæmoptysis not uncommon. Symptoms due to the bulk of the growth were often present, such as stridor, dysphagia, and œdema from venous obstruction. Pain which could be ascribed to metastatic deposits was seldom a prominent symptom. The signs usually indicated either a pleural effusion, which was not uncommonly brown from altered blood pigment, or the presence of a solid mass in the mediastinum or lung. Evidence of impairment of function of various structures of the mediastinum was frequently found. Cancer of the mediastinum occurred somewhat later in life. Pulmonary symptoms were less commonly prominent and metastatic deposits in bones or implicating nerves usually brought the patient under the notice of the physician. Signs of pulmonary or mediastinal disease were often absent; if present they tended to indicate obstruction of a bronchus or effusion resulting from pleural metastases rather than massive deposits in the lung or mediastina. In Hodgkin's disease and acute lymphatic leukæmia the presence of a mass of lymphatic gland tissue in the thoracic cavity was merely accidental but when present might produce symptoms and signs owing to its bulk. Cancer of the pleura seemed to be a disease of later life, tending to produce symptoms, as in the case of mediastinal cancer, from metastatic deposits and signs of pleural effusion. The series of cases of secondary growths in the lungs was sufficient to show the great variety of symptoms and signs that might be present but too short to permit any general deductions.—After Mr. SYMONDS and Dr. F. PARKES WEBER had spoken, Dr. WALL replied.

Dr. LEONARD G. GUTHRIE read a paper, composed jointly with Dr. W. D'ESTE EMERY, on a case of Lymphocythæmia (lymphatic leukæmia) in a boy, aged six years. In the course of his remarks he said that although lymphocythæmia so-called was undoubtedly a definite and separate disease, as shown by the post-mortem appearances, it was doubtful whether it could be diagnosed with certainty by examination of the blood during life. Excess of lymphocytes was held to be pathognomonic of the disease but it must be remembered that in early childhood lymphocytosis might be present in many other morbid conditions of the blood, all of which were protean in character so far as the results of examination of the blood were concerned. With regard to the terminology it seemed paradoxical to describe a case such as the present as one of lymphocythæmia when the total leucocyte count only amounted to 2000 per cubic millimetre. Yet though not in excess in the blood the lymphocytes, if indeed they were lymphocytes, were deposited in incalculable numbers in the tissues and organs. No doubt in time a more appropriate name would be found for that particularly fatal affection.—Dr. PARKES WEBER suggested lympho-sarcomatous permeation as a description of the condition, but altered this to lymphocytosis or lymphocytomatosis after Dr. D'ESTE EMERY, in replying, had pointed out that the expression lympho-sarcomatous could not apply to the case because the tubules of the kidney were unaffected, although that organ was "packed with growth."

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

The Municipality and the Tuberculous Patient.

A MEETING of this society was held on Jan. 6th, Dr. P. BOOBBYER, the President, being in the chair.

Dr. A. FULTON opened a discussion on the Attitude of the Municipality to the Treatment of Phthisis. He argued in favour of municipal sanatoriums, which, apart from curative and philanthropic influences, had a great educational value. Nottingham was so rich in medical charities that there was no need for extension of municipal treatment in the direction of further outpatient departments or dispensaries. He did not think the establishment of additional sanatoriums would injure the medical profession financially, for the richer class of patients would not be likely to avail themselves of such institutions, while the profession generally would be glad to be excused a long and profitless attendance on the poorer ones. The admission, treatment, discharge, and after-care of patients should be in the hands of some expert devoted to this purpose. It might even seem right to subsidise patients for some time after their discharge rather than let the benefit received be undone again by insufficient food before their proper earning powers came back again.

The PRESIDENT traced the statistical mortality from tuberculous diseases and phthisis in the past and at the present time, showing that the general death-rate both of tuberculosis and phthisis had now been halved as the result of general sanitary improvements in the course of the last half century. Of men and women engaged in the same class of work in the lace trade the phthisis mortality was very much heavier amongst the men, probably as a result of their more intemperate habits. He pointed out also what could be done by local sanitary authorities in the matter of preventive action, especially when aided by notification and personal teaching by expert lady health visitors.

Dr. F. H. JACOB insisted on the early examination of sputa before physical signs became obvious if cure was to be brought about. He thought it better for the serious cases to be isolated in municipal sanatoriums and urged the need of house disinfection with every change of tenancy.

Dr. C. H. CATTLE thought the results of the experiment of opening 40 beds to phthisical patients at the Nottingham isolation hospitals had been more successful than might have been anticipated. Besides great benefit to early cases such an institution sheltered many cases the nursing of which at home sooner or later broke down owing to the heavy demands upon the strength, the rest, the food, and the purses of relatives in their own houses. At the same time, the present provision for 40 beds was quite inadequate and might easily be filled even if increased to ten times that number.

Dr. W. TIBBLES did not favour further extension of municipal sanatoriums, for the ultimate results of such treatment were not as good as was at first supposed. He thought the urinary, intestinal, and other infective forms of tuberculosis should be guarded against quite as much as the pulmonary form.

Dr. W. HUNTER was, on the whole, satisfied with the preventive methods at present available in the homes of patients and considered that the expense of any further considerable extension of the sanatorium system at the expense of the ratepayers would be so great as to make it absolutely prohibitive.

Dr. A. J. SHARP strongly advocated notification.

Mr. O. K. WRIGHT instanced the great educational value of sanatorium treatment even on the limited scale adopted by the Nottingham corporation.

Dr. IDA E. FOX (Mansfield) had noticed that the introduction of compulsory notification of pulmonary tuberculosis in Sheffield had been accompanied by very little friction. Actual instances of phthisical subjects infecting their co-workers in offices had come under her notice at Sherwood Forest Sanatorium.

Dr. J. WATSON thought that any municipal scheme should give facilities for examination of sputum from people who had not placed themselves under medical care.

After Dr. FULTON had replied,

The PRESIDENT detailed the methods of house disinfection now in use in Nottingham. He was grateful

for any recognition of curative value in the branch of sanatorium work under his direction, but apart from the isolation of a few advanced cases, the main purpose of municipal sanatoriums was educative. Thus in New York the average stay of each patient was only five weeks, or just long enough to get him well drilled in all matters of personal hygiene. As to the economic loss of lives this was, to say the least, most serious. Indeed, it would be far cheaper to build sanatoriums and to isolate as many patients as possible, for in that case the ratepayers would not be burdened with the maintenance of their bereaved and penniless dependents as they were at present.

At the conclusion of the discussion a vote taken of those members present showed a strong and practically unanimous feeling in favour of voluntary or compulsory notification of pulmonary tuberculosis being adopted.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

A Modification of Bandl's Hollow Sound.—Exhibition of Specimens.—Intermenstrual Pain.

A MEETING of this section was held on Dec. 11th, 1908, Dr. E. HASTINGS TWEEDY, the President, being in the chair.

Mr. T. H. WILSON exhibited a Modification of Bandl's Hollow Sound which did away with the difficulty in the mechanical cleaning of the instrument.

The PRESIDENT exhibited specimens of Recurrent Fibroids and of Hypernephroma removed from a widow, aged 57 years, a XV-para, whose last pregnancy occurred 13 years ago. She had noticed a tumour in her side for three years; it had increased latterly in size. The physical signs were as follows: There was a large cystic tumour, very fixed, extending on the left side from the pubic brim to the kidney region. A cord-like mass felt through the rectum was diagnosed as ovarian pedicle and a diagnosis of probable ovarian cyst was made. On opening the abdomen a large retroperitoneal cyst came into view. The great omentum surrounded it on all sides. There were numerous adhesions to the intestines. The omentum was with difficulty separated and the enormous vessels were tied. During the process the tumour ruptured and about two pints of pus escaped. The pedicle was reached and the tumour was discovered to be renal in origin. The pedicle was secured with catgut and the ureter was divided and stitched into the abdominal wall. A gauze wick was inserted to provide an escape for oozing. Uninterrupted recovery ensued. Hypernephroma was a somewhat rare tumour. The first case in which a kidney was removed, a diagnosis of ovarian cyst having been made, was by the late Mr. Lawson Tait, and everyone was amazed at his statement that he believed it was an ovarian tumour until the pathologist told him it was a kidney.—Dr. R. J. ROWLETTE said that he had seen two or three hypernephromas shown by others. The tumour was usually situated apparently in the kidney, and was supposed to originate from the adrenal body. The structural connexion was not at all clear in most cases, but from the histology of the tumour it more closely resembled, where the type was well retained, the structure of the adrenal body than the kidney itself. Degeneration was fairly common in the tumour, but in the few instances that he had seen he had not observed so much degeneration as in the case before them. Microscopically the material resembled pus, though they were unable to isolate any micro-organism.—Dr. R. D. PUREFOY recalled cases in his own experience showing that what appeared to be an ovarian cyst might prove to be renal.—Dr. G. FITZGIBBON and Mr. WILSON also spoke.

Dr. PUREFOY read a paper on Intermenstrual Pain. One of the least common and least understood varieties of pain connected with, and dependent on, menstruation was that to which Priestley in 1872 applied the term "intermenstrual." Medical literature furnished but scanty records of such cases, and details as to treatment and its results had been seldom furnished. It often proved rebellious to treatment and showed marked liability to recurrence. It was generally met with between the ages of 25 and 35 years and was commonest in sterile women or those who had not been recently pregnant. Some writers had described the pain as paroxysmal and sudden in occurrence and severe in degree; and many attributed it to the condition known as hydrosalpinx. Dr. Purefoy was unable to agree with those statements as to the nature of the pain and its causation. In the most typical cases there was but little discoverable disease of the uterus and appendages, and in only a few cases was it associated with such watery discharge as might be attributed to leakage from a hydrosalpinx. Treatment should be constitutional to improve the general health and local if disease of the uterus or appendages could be detected.—A paper on the same subject by Mr. J. SPENCER SHEILL was read by Dr. FITZGIBBON.—Mr. WILSON thought that where there were evident local lesions which could be corrected with the result that the pain ceased it hardly came under the head of intermenstrual pain; neither did cases in which congestion of the ovaries was relieved by the loss of blood at the period. It was a matter of considerable doubt as to what the condition really was.—Mr. J. S. ASHE thought that the condition was probably due to some form of toxæmia arising from an excess of internal secretion of the ovary.—Dr. T. NEILL said that salicylate of menthol had recently been advised for the relief of pain.—Dr. FITZGIBBON said that in speaking of intermenstrual pain there was a tendency to mix up a variety of different diseases. They should keep in mind that the pain should be one which occurred at a fixed time between the periods and in which there was no definite organic disease. The ignorance which existed as to ovulation made it difficult to say certainly that it was congestion of the ovary that caused the pain, but he expected that Mr. Sheill's suggestion of circulatory treatment would improve the condition.—Dr. KATHARINE MAGUIRE said that she did not find the condition common in an excessive degree. She found aspirin rather a dangerous drug, so far as its gastric symptoms were concerned, though it certainly relieved pain. She found phenacetin to do good.—The PRESIDENT said that women suffered from constipation and congestion of the pelvic organs and he believed that this congestion would be relieved by free purging better than by the drugs mentioned. He thought that in most cases, not due to constipation or neurasthenia, they would find some disease of the tubes which might give no evidence of their condition to the examining finger.—Dr. PUREFOY, in reply, said that he agreed with Dr. Fitzgibbon's limitation of cases, but such typical cases were rare. He was very sparing in his prescription of drugs and considered that anything like repeated use of the coal-tar remedies was greatly to be deprecated.

SECTION OF PATHOLOGY.

Pernicious Anæmia.—Tuberculosis of Lungs, with Tuberculous Tumour in Cerebellum.—Bismuth Poisoning.—Exhibition of Specimens.

A MEETING of this section was held on Dec. 18th, 1908, Dr. A. R. PARSONS, the President, being in the chair.

The PRESIDENT read the following notes on the clinical history of a case of Pernicious Anæmia. A man, aged 45 years, formerly a fireman on board a cross-Channel steamer, went to the Extern Dispensary of the Royal City of Dublin Hospital on Sept. 10th, 1908, suffering from weakness and shortness of breath. His appearance was so suggestive of serious illness that he was admitted to the medical ward. On inquiry he stated that four or five months previously he had an attack of influenza and he attributed the onset of his present illness to starting work too soon, because shortly after resuming work he felt a throbbing in his head, and he felt sick until he sat down. A little later he got headache, palpitation of the heart, and weakness in his legs. In spite of these symptoms he continued at work for five weeks, though he felt as if he had a rope across his chest and abdomen and as if his head were bursting. He remained at home for ten weeks, but as he was making no progress he went to the hospital. He had always enjoyed good health and had been in the employment of his present company for 35 or 36 years. Until one year ago he acted as fireman; more recently he had acted as a collier. He chewed or smoked from 3 to 4 ounces of tobacco weekly. As regards alcohol he was never a heavy drinker and for the past three years had taken only an occasional glass of porter. He took tea at every meal; he had always had a liberal supply of good

food. He had abundant black hair but his face was pale and sallow-looking. The lips and mucous membrane of the mouth were very pale, almost the colour of the skin; the teeth were carious in part and covered with tartar; the ears were white. The panniculus adiposus was slight but he had not wasted. The nails were white. The veins over the back of the hand were not visible. The neck showed marked pulsation; a gland on each side was palpable. The thorax was normal, except for a systolic murmur audible over the mitral, aortic, and pulmonary areas. There was no tenderness on percussion over the sternum. The liver was quite normal, the spleen was not palpable, and a general examination of the abdomen disclosed nothing pathological. There was slight œdema of the ankles; a few cicatrices were present over the front of each tibia, probably traumatic in origin. The knee-jerks were easily elicited. There was no tenderness on pressure over the calves or the tibiæ; the inguinal glands were just palpable. He had frequently had oozing of blood-stained fluid from his gums, and the bowels were usually constipated. The urine had a specific gravity of 1015 and was acid in reaction. It contained no albumin, sugar, acetone, or diacetic acid, and only a very small quantity of indican. On admission the temperature was 98° F. and continued at or about normal for a fortnight after. The pulse during the same period varied from 96 to 108. Shortly after his admission smear preparations were made by the resident, Mr. Medcalfe, which showed definite poikilocytosis and such an increase in the white blood cells as to attract his special attention. No other changes were detectable at this stage in the red blood cells. On Sept. 25th a blood count showed hæmoglobin 20 per cent., red blood cells 1,150,000, and colour index 0·8. Poikilocytosis was still present. He (the President) did not detect any nucleated red blood cells, but with some searching Dr. A. C. O'Sullivan found a few normoblasts. In spite of all that could be done the course of the disease, even during the first fortnight, was steadily downwards. The patient complained of some pain in his right ear, and on Sept. 26th pus escaped freely from the external ear. His temperature rose to 101° and the pulse to 120. He became stupid and heavy; his temperature rose to 103° and he had a sharp attack of epistaxis. On Oct. 6th he seemed to be a shade better but on the morning of the 7th he got a profuse epistaxis and died shortly afterwards. A couple of days before his death several blood films were made which were of exceptional interest, especially in comparison with those made previously, and Dr. O'Sullivan was asked if he would be good enough to make the post-mortem examination. The clinical diagnosis was pernicious anæmia.—Dr. O'SULLIVAN said that the appearance of the organs at the post-mortem examination was similar to that found in pernicious anæmia with secondary septic infection. The heart showed well-marked tabby-cat striation and the liver contained a large quantity of iron pigment. The bone marrow also suggested pernicious anæmia. The blood was remarkable and unusual. The earlier specimens showed a definite polymorphonuclear leucocytosis and poikilocytosis, with very few nucleated red blood cells. The blood films, made some days before as well as those made after death, on the contrary, contained large numbers of nucleated red cells and a great increase in the number of the white cells. Among the latter were numerous myelocytes. Briefly, the appearance of the organs suggested pernicious anæmia, but the blood removed some days before death was much more like myelogenous leukæmia than pernicious anæmia.—Dr. J. MAGEE FINNY thought that the condition during life pointed rather to leukæmia than to pernicious anæmia. In a case which he published many years ago the iron stain was found also in the kidneys.—Dr. T. G. MOORHEAD quoted two cases as showing that there must be a large number of cases of pernicious anæmia in which the nucleated cells suddenly burst out into the blood in the last days of life, and more particularly when any acute infection occurred.——Dr. R. TRAVERS SMITH said that if the man's illness could be traced to mastoid disease, or if the original source of the septic infection was in the middle ear, there would be no necessity to explain the matter as pernicious leukæmia or anæmia. An elevation of temperature was not necessary in order to develop a leucocytosis. The nucleated red cells were not numerous and possibly they and the myelocytes that appeared were compensatory to the marked hæmolysis which was evidently going on.—Dr. W. BOXWELL referred to a case in which it occurred to him that the anæmia was due to a parasitic infection. The patient did not improve on treatment with arsenic. After two months he suddenly got much better and he left hospital with about 65 per cent. of red cells and hæmoglobin considerably over. In a second case Dr. Boxwell found a number of things in the blood of which he was not sure. They were like either lymphocytes or loose nuclei. In a third case—that of a woman who got well but returned to hospital and died—the post-mortem examination showed uniformly fatty organs, with iron stain in the liver, spleen, and kidneys. They all had bad teeth and the second case had an extremely septic condition in his mouth.—The PRESIDENT, in reply, said that the case presented, from a clinical point of view, what he would call the typical aspect of pernicious anæmia. The man had no trouble from his ears or mastoid cells. There were no ear symptoms whatever until 14 days after admission to hospital and he believed the infection occurred while in hospital. The case might, perhaps, be put into the ill-defined group called leukanæmia, but the weight of evidence was in favour of pernicious anæmia.—Dr. O'SULLIVAN, in reply, said that in thick parts of a preparation the cells sometimes became shrunken in the slow-drying, and it often became impossible to distinguish between a lymphocyte and a nucleated red cell. The difficulty did not occur in a thin preparation. There was no naked-eye appearance of iron in the kidneys.

Dr. J. F. O'CARROLL read notes of a case of Tuberculosis of Lungs with Tuberculous Tumour in the Cerebellum in a girl, aged 19 years, who was admitted to the Whitworth Hospital on May 12th, 1908. From Christmas, 1907, she began to have dimness of sight, and later complained of occipital headache and vomiting. Her sight became worse. There was no relation between the vomiting and food. The tongue was protruded slightly to the right. There was no marked difference in the expression of the two sides of the face. She was quite intelligent; her speech was slow and slightly slurring. There was no discharge from the ears. Both knee-jerks were well marked. There was no actual wasting of flesh and the menstrual function was right. She improved very much in hospital; but in October, during Dr. O'Carroll's absence from town, she complained of headache and had bleeding from the nose. Her temperature rose; she became somewhat comatose and lumbar puncture was performed on Nov. 9th, about 30 cubic centimetres of fluid being withdrawn. She improved a little for a few hours but died on Nov. 16th, after being several days in a state of coma.—Dr. PURSER said that during the performance of lumbar puncture the patient shrieked with headache, but it ceased in about ten minutes. At the post-mortem examination the only organs showing disease were the cerebellum and the lungs. He was aware that the upper lobe of the right lung was consolidated, but he was not aware of anything being wrong with the left lung. In it, however, they found an enormously thickened pleura, and the whole lung was riddled with cavities. It was most remarkable that with such extensive disease of both lungs there should be so little symptoms. The patient at no time had any cough.

Dr. K. E. L. G. GUNN read a note on Bismuth Poisoning.

Dr. PURSER exhibited specimens of a case of Rickets from a child, aged 14 months, who had been suffering from measles and had died from bronchial pneumonia following measles.

Dr. H. C. EARL showed specimens of Carcinoma of the Stomach and Liver taken from a woman who had been in hospital only a few hours. At the post-mortem examination the liver was found very much enlarged, and it contained so many nodules of cancer that at first sight it looked somewhat different from the ordinary secondary cancer of the liver. He found in the stomach an ulcer, which lay on the posterior wall over the pancreas. Part of the edge of the ulcer was sharply cut and terraced. He could find no other cancer in the body as a primary cause.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 8th, Dr. Leslie Durno, Vice-President, being in the chair.—Dr. N. S. Finzi read a paper on Medical Ionisation, its Uses and Possibilities. By medical ionisation was meant the introduction of ions of different sorts into the tissues of the human body. When metallic salts were dissolved in water a portion of the salt was split

up into its component parts; each of these parts carried an electrical charge, the acid radicle carrying a negative charge and the basic radicle a positive one. These minute particles were known as ions. Ions might be used for their general effects, their local effects, or both. The general effects were pretty much the same as in oral administration of solutions containing the same ions but ionised drugs acted more slowly and continued acting much longer owing to their being only gradually disengaged from the combinations they formed in the tissues into which they were driven. The local uses were the most important and fell into two classes: the action on the skin and that on the deep parts, such as joints, muscles, tendons, &c. A careful technique—which was fully explained—in the applications was most important. Stephane Leduc, who placed this method of treatment on a scientific basis by showing what actually occurred in cataphoresis, mentioned specially three different ions: (1) chlorine for causing absorption of fibrous tissues—sclerolysis; (2) zinc for treatment of rodent ulcer, ulcers, abscess, endometritis, and other conditions; and (3) salicylic ions for the treatment of neuralgias and rheumatism. Lithium in conjunction with iodine Dr. Finzi found most useful in gout and rheumatoid arthritis. He found that the agonising shoots of pain in acute gout disappeared after the first application and the slight tenderness which remained soon vanished after a second. Needless to say, the œdema rapidly disappeared after the first. The immediate relief was one of the most marvellous things in medicine. Zinc had been more used for ionisation than any other ion. In rodent ulcer the zinc ions seemed to have a selective action on the growth, causing the skin to heal over and the nodules to disappear. The uses to which ionisation had already been put were both numerous and varied and there was a great field for its use in skin diseases and affections of the joints and muscles.

Reviews and Notices of Books.

The Diagnosis of Small-pox. By T. F. RICKETTS, M.D., B.Sc. Lond., M.R.C.P. Lond., D.P.H., Medical Superintendent of the Small-pox Hospitals and of the River Ambulance Service of the Metropolitan Asylums Board. Illustrated from Photographs by J. B. BYLES, M.B., B.C. Cantab., F.R.C.S. Eng., D.P.H., Senior Assistant Medical Officer at the Small-pox Hospitals of the Metropolitan Asylums Board. With 12 coloured plates, 110 black-and-white plates, and 14 charts. London: Cassell and Co., Limited. 1908. Pp. 154. Price 21*s.*

ACUTE observation and original thought are welcome in any domain of medicine, more especially in one where there has flourished so much that was stereotyped and inaccurate, the fruit of dogmatic teaching by those who were divorced from their subject matter. For the credentials of the authors of this work, however, respect is compelled by their position and is increased by the fact that they have not rushed into print, for we learn that the work has been contemplated for upwards of ten years and that publication has been made possible only by the illustrations of Dr. Byles.

Of the work as a whole it may be said, without disparagement, that it is somewhat difficult to taste the cake for the plums, for there are almost as many full-page illustrations as pages of reading matter. Consequently the descriptive matter is almost overwhelmed by batches of plates occurring 12, 13, and so on, consecutively, and reference to the letterpress is therefore much hampered. But any disadvantage arising out of this departure from the usual standard is more than outweighed by the excellence of the illustrations. We do not remember to have seen the plates of a technical work in medicine approach the one under review in mastery of technique or in aptness of demonstration. Such plates as Nos. 46 and 68, Fig. 2, and Nos. 7 to 11 are admirable, indeed, in their accurate and lifelike presentation of the rash of small-pox, while Nos. 36, Fig. 2, and 69, for instance, have an artistic and pathetic charm of their own. We can testify, moreover, how much the vividness of the latter is emphasised by being viewed through a simple stereoscope: some 20 of the illustrations are shown in stereoscopic form. Anyone who turns to plate 101, Fig. 2, and then to plates 86 and 88 (we wish that Roman numerals had been discarded in the book), and studies the contrast of facial expression therein depicted, will learn a lesson in the diagnosis of one class of small-pox, a lesson invaluable for the avoidance of a mistake which may spell, and has before now spelt, disaster—viz., the overlooking, the so easy overlooking, of an obscure case of hæmorrhagic small-pox.

12 coloured plates, however, are what the authors regard with especial satisfaction. We agree. Their fidelity is very remarkable. Nos. 40, 61, 43, and 42, for instance, convey an impression of the appearance of the rash of small-pox which, short of close acquaintance with the disease, is unobtainable elsewhere. Such work surely marks the beginning of a time when nothing inferior will be considered adequate for medical illustration.

To turn now to the letterpress. At once it may be said that, admirable as are the illustrations, the subject matter surpasses them in importance. A word may first be said upon the scope of the book. It appears to have been the scheme of the writer to produce, not so much a monograph or text-book, as a series of observations, mainly original, upon aspects of the disease, which hitherto have been but lightly touched on in current literature or wholly overlooked, and to throw his presentation of them almost into the form of clinical lectures as it were with his 150 patients within reach of his pupils' eyes. It seems to us that this plan is happily conceived, for in the lack of actual experience, which nothing can replace, there would seem to be no way so well adapted to bring the disease vividly home to those who are ill-acquainted with it. If this be a correct interpretation of the author's idea, it helps us to understand the omissions and limitations which he has permitted himself. Some of these are not a little conspicuous. There is hardly anything, for instance, more essential to correct diagnosis than a proper appreciation of the difficulties which are certain to be encountered. Great respect must be felt if an enemy is to be foiled who is wily and slim to a degree; and in this branch of work, as in others, how very large a number of mistakes arise from undervaluing the foe. But little or nothing is said on that point. Details of material importance affecting the rash are also omitted, such as the information to be gained from its daily development and the deceptive characters which the facial eruption may display. Nor does any reference appear to have been made to such a vital point as the relative values to be attached to the history and to the present state of the patient. There appears to be no pretence, indeed, of offering a ready vade-mecum for infallible diagnosis; rather there is a storehouse of most suggestive information, some of which, however, we fear will be *caviare* to the general; or it might be said that a number of weapons are provided of the finest workmanship and temper, but they need to be taken in hand carefully and examined thoroughly before their user can hope to wield them with dexterity. All this, however, is only to reiterate that nothing adequately can replace work in the field.

The contents of the book may be indicated shortly as follows. The writer appears to have two main theses to advance which are, so far as we know, original. They are the dual nature of small-pox and his theory of the distribution of the rash. He furnishes besides some valuable suggestions with regard to the pathology of the rash, makes an important contribution to the literature of hæmorrhagic small-pox, and includes notes on modified small-pox, initial

rashes, and on various mimicking diseases and their distinctive characters. Space does not permit of comment on much that is of interest; we will merely say this, that the work is one which will bear repeated reference, for at each reading some new information or suggestion will be found.

We pass now to the writer's two main theses. Under the name "dual disease" he advances a conception which, though but slightly expounded in the text, must nevertheless be completely grasped by the reader, so fundamentally does it pervade the whole treatment of the subject. The word "dual" is used in the sense of a hyphened word being "dual"; it would probably express the writer's conception to call small-pox a hyphened disease. Element number one of the combination is the fever of the onset, a toxæmia which lasts about a week. This, the argument proceeds, is strictly analogous to scarlet fever and is often, but not always, marked by a characteristic rash—a toxæmic rash. When this illness is past the disease proper is over and done with. Yet nearly always there is tacked on to it a pathological excrescence, a complication or sequela analogous to the pneumonia of measles or to the adenitis of scarlet fever; and this is the second element of the combination—what the writer terms "the focal rash and secondary fever, which is generally the all in all both to the patient and physician." The focal rash, so termed, we presume, on account of its individual foci, is, of course, what is generally known as the characteristic small-pox rash. With the toxæmia are grouped for descriptive purposes the initial rashes and hæmorrhagic symptoms: "A patient may be said to suffer from toxic or hæmorrhagic small-pox when his life is menaced by the toxæmia," while all the phenomena of the characteristic eruption are descriptively grouped with the focal rash.

It is the exposition of the phenomena of this rash which will be regarded with the closest interest, and, indeed, it forms the most striking portion of the book. The keynote is struck in the preface by "the importance attributed to the distribution of the eruption, a diagnostic criterion which has been lifted from a subordinate to a leading position." In this we think that the author has made a most important and practical contribution to the knowledge of the disease and the process of masterly generalisation by which it has been reached will command wide admiration. Like Dr. R. A. Birdwood and others who have studied small-pox, Dr. Ricketts appears to have been stimulated by the question whether there was not some general law which governed and determined the extraordinary and puzzling varieties of the rash of small-pox. He noticed, what are so well known, the streaks or clusters of closely set pustules, often very much denser than the average of the field of rash with which they are associated. Irritation patches he terms them. Examples are given in illustrations—the impression of a mustard leaf is delineated by the rash and the bite of a cat is marked out; scratches, burns, or other cutaneous injuries are similarly evident. Not content, however, to regard these phenomena as pathological curiosities, Dr. Ricketts carried his observations further and collected many other examples. Friction from clothing provided many; special lesions were found to be associated with the pressure of a tape, for instance, or with the irritation of a vest. "The pressure of a collar-stud, friction from a collar, the chafing of the underclothing on the axillary folds, the pressure of the corsets against the sternum, the pressure of a brace button, the rubbing of the stocking or garter against the hamstrings, the chafing by the boot of the tendo Achillis or of the tendons along the front of the ankle-joint; some such incidents mark their effect in the majority of cases of small-pox, and many secure a record in some of these plates. ..... The factor common to all cases is a disturbance in the balance of the cutaneous irritation." Arrived at this working hypothesis to account for the phenomena of the distribution of the rash, he experiments, as it were, to test its validity. The converse should be true. It is. A part of the skin, artificially protected and rested, shows a lighter incidence of rash. How does the theory show when applied to the distribution of a typical case of small-pox? It is strengthened, for the incidence of rash on the face, the hands, the back, the chest, the feet, and other parts is in conformity with the general law above mentioned; and so, moreover, is the distribution of the rash on the details of these areas. Such, very briefly, is the thesis; it is worked out in detail by continual reference to the life-like plates; and when the rash of small-pox is so regarded order is evolved from chaos.

Finally, and most important, the author has found this law a more marked characteristic of small-pox than of any other disease; he has used it, and caused it to be used, in London for 15 years and has found it abundantly justified by experience. He is careful to add that this particular aspect of a case must be weighed along with all the other points and judgment never based on one factor alone.

Throughout the text measured expression and quiet assurance, a scientific spirit, and scholarly style plainly betoken the master. Those who have already been his pupils will regard him with increased respect and all who have to deal with the formidable scourge which he has done so much to check will be strongly attracted by his teaching, for the work is one of those, unless we are much mistaken, which is destined to occupy a leading place for many years to come in the literature of epidemiology.

Nouveau Traité de Médecine et de Thérapeutique. Sous la direction de MM. P. BROUARDEL et A. GILBERT. Fascicule XII.: Maladies de la Nutrition—Goutte—Obésité—Diabète. (*New Treatise on Medicine and Therapeutics.* Fasciculus XII.: Diseases of Nutrition—Gout—Obesity—Diabetes.) Par MM. H. RICHARDIÈRE et J. A. SICARD. Avec 15 figures dans le texte. Paris: J. B. Baillière et Fils. 1907. Pp. 358. Price 7 francs.

THE authors commence their consideration of the important group of diseases of nutrition by a discussion of the significance of the terms "arthritism" and "arthritic diathesis," and they are of opinion that the abstract conceptions underlying these expressions are of value and that therefore these terms should be retained. According to them, the arithritic diathesis implies a defect of nutrition, a trophoneurosis, a glandular-vascular disturbance, or a tendency to auto-infection which results in the appearance in direct or collateral family association of various disorders of nutrition, either a slowing or an over-activity, of which gout, obesity, diabetes, renal and biliary lithiasis, or migraine may be the expression.

The subject of gout is considered in great detail and the account given of this malady, its protean manifestations and complications, is thorough and comprehensive. At the outset the authors confess that even at the present time the old axiom formulated by Aretæus that "the gods alone are acquainted with the true nature of gout" is not far removed from the truth. An interesting *résumé* is given of what is known of the history of the malady both in ancient and modern times, while the origin of the term "gout" is discussed. Full justice is done to the work of the great English observers, notably Sydenham, whose admirable account of the gouty paroxysm, based on his own personal experience as well as on the observations of patients, is quoted *in extenso*, as the best description of the disease. The work of Boerhaave, van Swieten, and Scheele is next mentioned. The epoch-marking discoveries of Garrod receive full recognition and the view of Bouchard that the excess of uric acid in the blood is only one

expression of the defect of nutrition is emphasised. The physiology of uric acid and its compounds is discussed and the view of Schmoll that the uric acid exists in the plasma in combination with an organic substance and not as a salt is quoted. The researches of Minkowski, Gotto, and Kossel have demonstrated that this substance is thyminic acid and that like uric acid itself it is formed as a by-product in the metabolism of the nucleins. The various theories of the pathogenesis of gout are detailed —viz., that it is due to defective elimination from renal inadequacy (Garrod), that it is due to incomplete combustion of organic material (Bouchard), that it results from an excessive formation of uric acid (Lecorché), that it is due to a defect in the solubility of the uric acid owing to a lack of the thyminic acid (Minkowski and Schmoll), and, lastly, that it is due to a hypoacidity of the plasma and tissue fluids (Joulié). The clinical features of gout, its various manifestations and the conditions associated with it are described in detail. In regard to the diet of the gouty the recommendations of Armand Gautier are quoted. He counsels moderation and only permits the gouty person to eat sparingly of bread, which sets free in the organism an excess of phosphoric acid. The medicinal treatment is discussed and various prescriptions are given.

The condition of obesity is next considered on the same general plan. The physiology of the metabolism of fat is discussed and the theories to account for its excessive deposit in obesity are enumerated. They comprise the theory of over-alimentation, that of Bouchard that it is due to a slowing of the processes of nutrition, the digestive theory that obesity may result from defects in the digestion of fat, the anoxæmic theory that the condition results from a deficiency of oxygen in the body, the trophoneurotic theory, and the theory that it is due to a defect in the function of certain vascular glands, notably the thyroid. The etiology of obesity is considered at some length and various clinical forms of the condition are differentiated. Certain diets devised to reduce the weight of the obese are described and the various drugs which have been recommended, such as purgatives, fucus vesiculosus, iodides, and thyroid extract, are enumerated.

The account given of diabetes is most exhaustive and is one of the best studies of that disease with which we are acquainted. The various problems connected with it are discussed at considerable length, notably the question of the metabolism of sugar in the organism and its perversion in disease. A classification is given of the cases and in addition to the ordinary types of arthritic or fat diabetes and pancreatic or thin diabetes, nervous, traumatic, bronzed, renal, suprarenal, conjugal, and various other forms are differentiated. The complications of the disease, its diagnosis and treatment, are also fully dealt with. Shorter sections are devoted to glycosuria, diabetes insipidus, and azoturia.

The book is a very useful and trustworthy treatise on the subjects with which it is concerned.

Essentials of Bacteriology, being a Concise and Systematic Introduction to the Study of Bacteria and Allied Organisms. By M. V. BALL, M.D., Member of the Academy of Sciences of Philadelphia, &c.; formerly Instructor in Bacteriology at the Philadelphia Polyclinic. Sixth edition, thoroughly revised, with 135 illustrations, some in colours. London and Philadelphia: W. B. Saunders. 1908. Pp. 290. Price 4*s.* net.

THIS book forms one of the series known as Saunders's Question Compends or formerly as Students' Essentials. To the success of the series the publisher draws attention in the fly-leaf—success as measured by numbers of copies sold. This member of the series, judged by the same standard, would also appear to have met with appreciation, as, published originally in 1891, it has reached its sixth edition and seems to have been reprinted at least every two years. The object of the author is to produce "a concise treatise upon the practical bacteriology of *to-day* chiefly for the medical student, which he may use in his laboratory." The treatise is certainly concise, as in the small space of 290 pages every subject and every micro-organism usually dealt with in manuals of bacteriology are at least mentioned. Indeed, the list of micro-organisms introduced is unusually long and includes both non-pathogenic and pathogenic germs, while the protozoa are not omitted. Fortunately, the author, though calling attention in his preface to this edition to the intimate relations now existing between bacteriology, zoology, and chemistry, has not introduced a study of these allied sciences into the body of the work. The present edition has been thoroughly revised and the additions include the opsonic technique and new chapters on the protozoa. The usual sections on air, soil, water, milk, and sewage are also included, and the last 40 pages of the book are occupied by a tabular list of micro-organisms with their principal characters. As we said in reviewing an earlier edition of this work[1] it would require the greatest possible care and great precision of language to deal with such a mass of material in such a way as to give an accurate if not adequate idea of the science of bacteriology. This difficulty does not appear to have been overcome in the present edition. At the same time there are few, if any, positively inaccurate statements and sometimes, as in the history of opsonins, the matter is stated tersely and precisely. For examination purposes a book such as this, which gives the principal facts with regard to a large number of micro-organisms, may be useful but it has little educational value. The illustrations, drawn from various sources, such as Fraenkel and Pfeiffer's atlas, Kolle and Wassermann, and other works, are good and in most cases are satisfactorily reproduced.

LIBRARY TABLE.

Reports of the Society for the Study of Disease in Children. Vol. VIII. Session of 1907-08. Editor: GEORGE CARPENTER, M.D. Lond. London: J. and A. Churchill. Pp. lxxxviii.–504. Price 12*s.* net.—This is presumably the last issue of these Reports in their present form, as the society has become a section of the Royal Society of Medicine. We shall part from the present series with some regret, as it has contained much of interest, but we do not doubt that the volumes of sectional reports of the future will maintain the high standard already set. The volume before us contains, among other things, an interesting discusssion on inherited syphilis extending over more than 100 pages. Among the other papers we may mention one on hypertrophic stenosis of the pylorus by Dr. George Carpenter, with a discussion following it; one by Mr. H. S. Clogg on a case of intestinal obstruction due to a diverticulum caused by an accessory pancreas; one by Mr. Hugh Lett on the relationship between Henoch's purpura and intussusception, and one on the diagnosis of urinary tuberculosis in children, by Mr. C. A. Leedham-Green. Many individual cases of unusual disease or malformation are also put on record.

Youth, its Education, Régime, and Hygiene. By G. STANLEY HALL, Ph.D., LL.D., President of Clark University and Professor of Psychology and Pedagogy. London: Sidney Appleton. 1907. Pp. 379. Price 6*s.* net.—In this book, which is mainly an epitome of the author's larger work on "Adolescence" published some four years ago, Professor Hall discusses the many important problems concerned with the education, *régime*, and hygiene of youth. The

[1] THE LANCET, May 26th, 1906, p. 1476.

time is long past when the mode of education of our children and the best methods of carrying it out can be settled without anxious thought at any rate on the part of those intrusted with this task. Even at the present day the matter is left largely in the hands of the skilled few and the parent is only too often content to allow his son to follow in his own footsteps without any suspicion that this may be far from the best method of training his child for the battle of life. The subject is one of absorbing interest and of the utmost importance, since upon our correct judgment in the matter depends to a very large extent the success or failure of our children in life. It might be thought that all these questions had long ago been settled definitely but a perusal of this little volume will show that there are many important problems still unsolved. Nowadays we have to consider not only what to do with our sons but also what to do with our daughters, and we would commend especially to medical men a perusal of the chapter devoted to the education of girls and the opinion expressed by the writer as to the advantages and the disadvantages of the co-education of the sexes. Professor Hall, as is only to be expected, has no sympathy with those advanced educationists who hold that a woman's college should be founded on the assumption that girls should primarily be trained to independence and self-support and that matrimony and motherhood if they come will take care of themselves or, as some even urge, are thus best provided for. In the twentieth century medical men are only too familiar with the feminine type aptly called by the author "parturition phobiacs," women who are incensed by any mention of the functions peculiar to their sex and who consider the consideration of such things "not fit for cultivated women." "In the education of girls the first aim, which should dominate everything else, should be health," and in this sentence Professor Hall enunciates a proposition to which we fear there are only too few adherents among the high school mistresses of the present time. Medical men can, however, do much good by enforcing this view upon parents and so helping to counteract the evil which its non-observance may lead to. The author has produced a most interesting book in which the subject is succinctly considered from all points of view and the work is well worth reading by those who are intrusted with the care of youth.

The Cat: A Neglected Factor in Sanitary Science. By CAROLINE A. OSBORNE, M.D. (U.S.A.).—That the cat plays a more or less important rôle in the transmission of disease will not be disputed by anyone who has any knowledge of the intricacies of infectious disease. It may be at once accepted that such is the fact. The problem for solution therefore is: What is the pathological significance of this transmission? Does the cat from contact with a diphtheritic person actually contract the disease or does it act simply as a mechanical carrying agent? It is questions such as this which Dr. Osborne has set herself the task of answering as far as possible in this interesting little paper. The basis of the author's arguments may be said to be a quotation from Cohen's "System of Physiological Therapeutics" (p. 144), as follows: "The domestic animals suffer from a number of diseases transmissible to man, and may also convey pathogenic organisms to man without themselves being affected." This may occur, we are further informed, by: (1) direct contact; (2) aerial infection; (3) inoculation; and (4) general contagion. Certain disputed points are raised in considering the nature of the transmission of disease. It may be taken for granted that tuberculosis is actually transmissible from man to animals and there is no reason to doubt that the animal disease may be transmitted to man. It is by no means common to find tuberculous lesions in the cat, probably not more than 1 per cent. being affected, yet when such disease does exist at cannot but be of the gravest nature, seeing that the relations between young children and their pets are so intimate. The most disputed point involved in this subject is as to whether diphtheria is contracted by the cat or merely transmitted by it. The author refers at considerable length to this disease, quoting from many authorities of various nationalities. We are told (Osler): "Cats, calves, and fowls are subject to contagious membranous diseases, which are, however, not identical with diphtheria in man and not communicable to him." Again, quoting from Cohen's "Physiological Therapeutics": "The lower animals, as cats, dogs, horses, cattle, and chickens, occasionally suffer from a pseudo-membranous affection of the upper respiratory passages simulating diphtheria, and from this infection has been claimed. It is rare, however, that true diphtheria bacilli are found in these animals, although they have been found susceptible to the disease experimentally induced." The statements of these two eminent men may be taken as representing also the trend of veterinary expert opinion on the subject. Although affections of the throat are very common in cats and dogs, a well-known veterinary surgeon informs us that in his wide experience not in one single instance has he been able to trace any concurrent disease of a similar nature in any of the members of the household whose pet was ill. The other side of this momentous question has its numerous exponents and we read (Parker): "An affection of the throat, similar to diphtheria, may be found in cats, pigeons, fowls, &c., during epidemics of diphtheria." Klein also, we are told, believes that diphtheria is a natural disease of the cat. Several cases illustrating the agency of the cat are reported. In support of this side of the question is a paper which was read by Dr. Louis W. Sambon before the Royal Society of Medicine recently.[1] His main argument consists of statistics which, presumably correct, speak eloquently in favour of the opinion that diphtheria is transmissible between man and the lower animals. Whether it is a fact that cats are subject to this dreaded disease or not, it is certain that the infection may be carried by them and hence they should be rigidly excluded from the sick room. There are indisputably certain diseases which are infectious from the cat to man, among which scabies and ringworm stand out prominently. A mangy cat will infect a whole neighbourhood of its nocturnal companions and these will carry the disease to their respective homes, infecting dogs and even their owners. The form of itch caught in this way is indistinguishable from human scabies both in the distribution of the acarus and in the morphology of the causal parasite. Many interesting points are raised by Dr. Osborne's paper which is probably the first of its kind to be put before the scientific world. There is much scope for investigation and it is to be hoped that this little brochure will arouse widespread interest in the problems involved.

JOURNALS AND MAGAZINES.

The Biochemical Journal. Edited by BENJAMIN MOORE, M.A., D.Sc., and EDWARD WHITLEY, M.A. Vol. III., No. 10. Dec. 14th, 1908. Biochemical Department, Johnston Laboratories, University of Liverpool. Subscription 15*s.* per volume.—The contents of this number are: 1. Variations in the Free Hydrochloric Acid of the Gastric Contents in Cancer and the so-called "Physiologically Active" Hydrochloric Acid, by Benjamin Moore, M.A., D.Sc., Johnston professor of biochemistry, University of Liverpool. Professor Moore finds that the free hydrochloric acid of the gastric contents after a test-meal is sensitive to a marked extent in most diseased or debilitated conditions, and the average of a series of cases taken at random from a hospital ward is lower than a similar series from healthy individuals.

[1] THE LANCET, April 18th, 1908, p. 1143.

The depression is particularly well marked in cases of cancer whatever the organ attacked may be. 2. The Hydrolytic Enzymes of Invertebrates, by H. E. Roaf, M.D.Tor., lecturer on physiology, University of Liverpool. The enzymes were prepared by precipitation of the extracts of glycerine with alcohol, obtained from the digestive glands of cancer pagurus (edible crab), the liver of the patella vulgata (limpet), the intestine of echinus esculentus (sea urchin), and the disk of ophiocoma (brittle star). The action of each extract on fibrin and fat was investigated. 3. Variations in the Osmotic Concentration of the Blood and Cœlomic Fluids of Aquatic Animals caused by Changes in the External Medium, by W. J. Dakin, M.Sc., 1851 exhibitioner in zoology, University of Liverpool. This number contains the title-page and table of contents of Vol. III. of the journal which it completes.

The Dublin Journal of Medical Science.—The original communications in the December issue (1908) consist of two historical articles. The first of these is an interesting sketch of the History of Medicine in Ireland, by Dr. T. Gillman Moorhead. The Dublin school has produced many men of note whose names will always live in medical annals—Graves, Stokes, Corrigan, Colles, and many others—and the retrospect of the general history of the school is well worth reading. In the second article Professor J. J. Walsh of New York calls attention to Medical Education in the Middle Ages and defends the paradox that "present conditions represent little if any improvement over what obtained in medical practice and education some seven centuries ago." He notes the care which was bestowed by the popes on provision for medical training.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XXXVIII., No. 1. London: C. F. Clay. Dec. 30th, 1908. Price 7*s.*—This number of the *Journal of Physiology* only contains two articles, though both are of considerable interest. 1. The Effects of Muscular Work upon the Excretion of Endogenous Purins, by E. L. Kennaway, British Medical Association research scholar. The author shows that during unaccustomed muscular exercise the output of uric acid is diminished, while that of the purin bases is increased but only to a slight extent; both effects seem to be due to defective oxidation of purin compounds. 2. The Coagulation of the Blood, by John Mellanby, M.D. Cantab., George Henry Lewes student; from the Physiological Laboratory, Cambridge. Dr. Mellanby used bird's blood in his experiments because, as shown by Delezenne, bird's blood if carefully collected yields a plasma that is not spontaneously coagulable. The blood was collected from a large cockerel and the first portions being rejected was centrifuged and the resulting plasma, which remained fluid for many days, was decanted off. Dr. Mellanby finds that fibrinogen is always associated with prothrombin, consequently solutions of fibrinogen may be coagulated by kinase and calcium chloride or by fibrin ferment. Kinase and calcium chloride generate fibrin ferment from the prothrombin associated with the fibrinogen. It is probable that calcium salts alone cannot generate fibrin ferment from prothrombin but the presence of minute traces of kinase renders the production of an active ferment from it certain. Serum from spontaneously coagulated blood usually contains no prothrombin. Metathrombin is kinase. Plasma (and serum) contain a large quantity of antifibrin ferment. This body combines chemically with fibrin ferment to form an inactive compound which cannot be decomposed by acids.

The Bristol Medico-Chirurgical Journal.—In the December number is published an address by Dr. J. Michell Clarke upon recent work on leukæmia and allied affections. He concludes by admitting that the relationship between this malady and sarcoma cannot at present be determined. Dr. Carey Coombs writes on certain mid-diastolic murmurs which he attributes to the suction of blood by the expanding ventricle in the absence of affection of the mitral orifice, and Dr. W. Kenneth Wills gives a humorous account of his experience as volunteer surgeon on a man-of-war at Quebec during the recent festivities. Dr. T. M. Carter and Dr. I. Walker Hall record a case of dilatation of cerebral vessels with basal hæmorrhage in a girl aged 16 years, and Mr. T. Carwardine briefly recounts some instances of gall-stones and of pancreatic disease.

The Birmingham Medical Review.—Under the title of "Present Views on Diseases of the Joints," Professor Howard Marsh gives in the November issue an instructive account of the progress which has been made in this branch of surgery and discusses such conditions as tuberculous, rheumatoid, gonorrhœal, and other infective maladies of the joints. Dr. James Miller and Dr. H. H. Whaite record a very interesting case of purpura hæmorrhagica, in which there were ulceration of the œsophagus and small intestine, gummata of the liver, and syphilitic disease of the right lung; they appear, however, unwilling to admit that the cutaneous condition and the ulcers were due to the syphilitic infection. Dr. Miller also contributes a short account of the recent International Congress on Tuberculosis at Washington.

UNIVERSITY OF LONDON.—The Military Education Committee appointed by the Senate on Dec. 16th, 1908, to manage the University contingent of the Officers' Training Corps has received the reply from the War Office to the offer of the University to furnish a contingent of the Officers' Training Corps. The Army Council has sanctioned the formation of a contingent which shall include an infantry, an engineer, and a medical unit, these units being composed of three companies of infantry, one company of engineers, and two sections of a field ambulance respectively. It is expected that additional companies will be formed at a later date, subject to the sanction of the Army Council. The rules for the contingent provide that admission to the contingent shall be restricted to gentlemen who are members of the University of London or are non-matriculated students pursuing a regular course in schools of the University, save that subject to such regulations, if any, as may be prescribed by the Military Education Committee, power is reserved to the commanding officer in special cases to admit gentlemen who, though not comprised in either of the foregoing categories, are desirous of gaining the certificates of proficiency obtainable in the Officers' Training Corps. The corps is intended for the preliminary training of young men with a view to their qualifying for commissions in the Special Reserve of Officers or the Territorial Force, and the membership of the corps is restricted by the Army Council to British subjects of pure European descent. Cadets enrol normally for two years, but enrolment for one year may be permitted under special conditions in the present session. After the second year of membership cadets may re-engage annually for the purpose of obtaining certificates A and B, but they will not, unless in exceptional circumstances, be permitted to remain as cadets for more than four years. Two of the infantry companies will be located at University College and King's College respectively; the location of the third company is not at present fixed. The engineer company will not be attached to any particular school of the University, but will draw its members chiefly from the various schools of the University in the Faculty of Engineering. The members of the medical unit will be drawn from the medical schools attached to the University; more than 100 students from Guy's, St. Bartholomew's, St. Thomas's, University College, King's College, and other medical schools have already applied for membership. Enrolment in the contingent will begin immediately after the Christmas vacation. With regard to headquarters, no arrangements have yet been made, and the training will be carried out for the present in the colleges attached to the University; the consideration of this question, as of other questions, such as the possibility of organising cavalry and artillery units, has been postponed pending the appointment of the adjutant and the establishment of the infantry, engineer, and medical units.

THE LANCET.

LONDON: SATURDAY, JANUARY 16, 1909.

Country Practice and Sudden Cold.

WE have received from a correspondent who lives in a bleak district rather to the west of Norfolk some heterogeneous notes on the conditions of country practice in the neighbourhood during a sudden and severe spell of cold, the incidence of which upon the poorer of the patients tended to increase the amount of medical work exactly when the conditions were most adverse to its performance. "The sudden occurrence," he writes, "of sharp frosty weather accompanied by heavy snow, such weather as was experienced here and nearly all over England just after Christmas, naturally had the effect of making the work of the country practitioner far more laborious. If the medical man is living in a sparsely populated neighbourhood, in which his professional journeys are necessarily long, a sudden period of cold snowy weather renders his routine extremely onerous, and if in addition the roads are ill-kept the conduct of his practice is often thrown completely out of order. But I am alluding to a much longer spell of cold than that which we have just experienced, and am rather recalling the winters of 20 and 30 years ago. Nowadays really cold weather with snow seldom lasts long enough to make a great difference to the working of a country practice, and it is many years since frost and snow held so prolonged a sway as to tax severely the resources of the country medical man. Time was when sleighs were in ordinary use in the winter by the country practitioners of this district, who either kept a sleigh or had by them always runners on which the body of an old gig could be placed in a very short space of time. At the present such a precaution would be regarded as laughable." This remark is rather a striking confirmation of the widespread belief that the seasons in this country have really undergone some change, and we may soon be expecting from meteorologists a pronouncement on the matter that may guide us as to our expectations. For our houses, our drainage, our roads, our agricultural and gardening plans—the list could be added to indefinitely—are all arranged in the anticipation of drawn-out rigours which do not arrive. To go back to our correspondent's letter, he finds that the chief difficulty produced by a spell of frost and snow would be obviated for medical men if the roads were kept in a uniformly good state. There is no more important factor in the successful working of a country practice in the winter than good roads. That roads vary as to their excellence or otherwise in different localities is obvious, but in the part of the country now under consideration the very best and the very worst seem to be blended. "The main roads," he writes, "are good but the by-roads are unspeakably bad. Since the time that the county council took the main roads in hand their condition has improved and at the present time they are in a satisfactory state, but the by-roads are the despair of the country medical man who has to use them but finds them in bad weather quite impassable." We doubt if the Eastern counties are here in any way singular. So far as the majority of the main roads in the country districts of England are concerned little fault can be found, and during the last decade they have improved and are now nearly as good as they were in the old turnpike days in spite of the assaults of motor traffic; but it must be remembered that much more money has to be spent upon them. We are in hopes that the important dust problem in regard to motor traffic will continue to engage the attention of the public, for the absolute necessity, for reasons of elementary hygiene, of abating the dust nuisance will incidentally compel the securing of good road surfaces and the making of enactments to pay for the construction and maintenance of the same by which medical men will benefit. For there seems no doubt that the medical man's work is much facilitated by the use of a suitable car, and those of our readers who have followed Mr. C. T. W. HIRSCH'S articles in our columns have probably come to this conclusion.

But frost and snow interfere with the smooth working of a country practice in an out-of-the-way district in more ways than by increasing the medical man's labour in travelling. The position of the patient during a fall of snow in a sparsely populated district is greatly endangered by the difficulties so frequently met with of sending for a medical man. This point is exemplified as follows by our correspondent. "I know," he writes, "of a large off farm on which are employed 15 men who live with their wives and families in cottages placed in the vicinity of the farm buildings, forming a small isolated colony. These houses are three miles from the nearest medical man, the roads are bad, and if prompt medical assistance is needed a messenger must be either sent on foot, or application must be made to the bailiff at the farmhouse for the use of a horse and cart—which are not always available. If speedy medical aid is required at night and if the roads are covered with snow it is certain that, however urgently the medical man's services may be required, a long time must elapse before he can arrive. And if he in his turn requires additional assistance of any sort, personal or instrumental, more precious hours must be wasted. This situation is, of course, not peculiar to any district but must occur wherever the population is scattered. Whilst living some years ago in the North of England I had occasion to visit a village of cottages clustered on the banks of the Wear, which was by road five miles from the nearest medical man and something like four miles using a short cut by footpaths across the country which were not available for horse traffic. During one winter extremely cold weather lasted for some weeks and heavy drifting snow covered the roads and fields. It happened that in this village at the time there was much sickness and I well recall the grave difficulties encountered by the people of the village in procuring medical assistance and by the medical practitioners in reaching their patients." This, of course, is a story that might have reached us from any part of the United Kingdom, and England is, in many respects, the

most favoured of the three divisions. In some of the thinly populated parts of Scotland it is by no means uncommon for shepherds' huts to be situated 15 miles from the nearest medical man, and in Ireland situations practically identical could be found; while the obstacles here opposed by winter may not be merely severe but prohibitive, storms and floods alike preventing the patient from communicating with the medical man and the medical man with the patient. The circumstances here, however, merely accentuate the well-known fact that large parts of Ireland and Scotland ought to be provided with a properly subsidised State medical service, the conditions of practice not at the best of times permitting the medical man either to render efficient aid to the public or to obtain reasonable remuneration for his labours. We are not referring to these grave social conditions but only to our correspondent's remarks upon the difficulties which arise in English country practice from the sudden onset of cold, and with regard to these the moral of his story is "Keep your powder dry." The medical man must take special pains to see that his motor-car remains unaffected, or that his horseflesh is in condition to do extra work; he must be vigilant to see that he starts on his journeys with a very complete armamentarium; and where it is possible he should establish a connexion with a colleague whereby mutual assistance in circumstances of particular seriousness may be rendered. In this way lives may be saved.

A third point in our correspondent's long and interesting communication is of a distinctly optimistic tendency. Speaking from personal experience he does not think that a sudden spell of cold weather produces quite the sickness and mortality among the rural poor which he sees always attributed to it in text-books. He thinks that the poor in towns, where prompt medical attendance can always be obtained, seem to suffer more than the poor in the country judging by his experience in Norfolk, while he doubts whether poverty, by which semi-starvation is not implied, is responsible for all the sickness attributed to its severities. "It would seem reasonable to conclude," he writes, "that the sufferings of the sick must be considerably intensified when they are not able to provide themselves with enough warmth-giving and nourishing food and are seldom in their dwellings well protected against the vicissitudes of the weather. One would imagine that it might be laid down almost as an axiom that the poorer a sick individual was the more he or she would feel the effects of severe cold. Whether, however, the mortality or sickness amongst the rural poor is comparatively greater during a term of very sharp weather than it is among their more well-to-do neighbours is a question the answer to which does not seem quite clear to me. I cannot trace that the extreme cold affects the poor more injuriously than it affects the rich and well-to-do, premising that by poverty I do not mean starvation. The absence of most of the artificial aids to comfort seems to be counterbalanced by the powers of endurance developed. A life of hardship and of scarcity of food leads, perhaps, to the acquisition of a large degree of immunity to cold, and the poor man to a certain extent does not feel the pangs of sickness so acutely. I have just visited the cottages of several labourers in this district. The cottages were fairly good specimens of building, built of brick, and containing, as a rule, two rooms downstairs and two rooms upstairs. One of the rooms downstairs is usually spacious, while the other room is quite small, as are also the bedrooms. Large families are the rule and old persons of both sexes are numerous. The average wage of an Eastern counties' agricultural labourer is about 16*s.* per week, and the rent of such a cottage as I have described is from 1*s.* 6*d.* to 2*s.* a week; it can easily be understood that there is here no money for anything but the bare needs of life. Nevertheless, among the young and middle-aged men and women, during the recent sharp spell of cold, no signs could be witnessed of lack of vitality due to the low temperature. Some of the old people were more uncomfortable but they were not made ill. A man, aged 80, whom I found sitting over a small fire in a bare, draughty room, the door of which opened upon the road, complained that he felt the cold! By the rules of medicine he ought to have been collapsed. But generally the old persons in 15 typical agricultural cottages did not appear to be more greatly affected by the cold than their juniors or than would have been the case with people of the same age in a higher station of life.' To draw conclusions of any definite sort from a house-to-house visitation of so small a range would be very rash, but such observations as those made by our correspondent are not without considerable value. We should be interested to hear how his opinions tally with those formed by general practitioners in other parts of the country. It is generally stated that sudden spells of cold fall with disproportionate severity upon the rural poor, and the most serious part of the situation then would be that exactly when the services of the medical men are most impeded by climatic conditions those services are in aggravated request. And apart from actual sickness there is the misery of cold, a misery which is accompanied by a torpid reluctance to complain. Possibly, the effects of cold, merely as painful or uncomfortable to the old and the poorly fed, have been a little exaggerated, but we must not believe that these effects are necessarily small because they are not insisted upon by the victims. The agricultural labourer has not the gift of glib speech, despite his powers for occasional apt remarks, and he may often be feeling a great deal more than he cares to express.

Cardiac Motion as Revealed by the Vivisection of Disease.

IN THE LANCET of Jan. 9th, p. 77, we published an address delivered before the Æsculapian Society of London by Dr. ALEXANDER MORISON, under the heading of "Cardiac Motion as Revealed by the Vivisection of Disease." The basis of his remarks was founded on the case of a patient who was under his care at the Great Northern Central Hospital suffering from sarcoma of the heart. Such a condition is rare and from a clinical point of view there were many features of unusual interest, but Dr. MORISON utilised his observations to further advantage by drawing from them important and suggestive

physiological and pathological deductions. During recent years much advance has been made in the knowledge of the physiology of the heart and after laying stress on the three factors which underlie cardiac movement—namely, the muscular, hæmic, and neural—he referred to the important researches of JAMES MACKENZIE and others who have demonstrated the independent yet associated rhythmicity of the muscular fibres of veins, auricles, and ventricles. The lecturer did not fully discuss the arguments, either on the side of the neurogenist or myogenist, as to the essential nature of cardiac motion, but pleaded for a triunity or trinity in organic action composed inextricably of the three factors above named. The investigations of HIS were naturally referred to at some length and the functions of the auriculo-ventricular bundle and their disturbance in disease were duly discussed. Whilst fully recognising the importance of physiological research Dr. MORISON rightly insisted on the valuable deductions which might be made by studying the effect of partial disablement of the heart by disease and suggested that an estimate could thus be arrived at as to the degree of independent rhythmicity possessed by the several portions of the heart.

For an account of the clinical symptoms and progress of the case we refer our readers to the paper itself. One interesting feature may, however, be mentioned, and that is the temporary relief which was afforded to the patient by the removal of two ribs and their cartilages over the bulging of the chest. This procedure lowered the pressure in the thorax and permitted further growth in the direction of lessened resistance. We are more concerned, however, with the conclusions at which Dr. MORISON arrived after a careful survey of the clinical and pathological phenomena which presented themselves. The necropsy revealed the fact that the right side of the heart was so involved in the growth that the circulation had apparently to be carried on almost entirely by the left chamber. The aspiratory and propulsive aid of the right chambers was practically extinguished and the left side of the heart was acting for a considerable period independently of the right. As is pointed out, this in itself is an important conclusion, for the possibility of this occurring in a heart which has not been bisected is denied by many observers and the clinical occurrence of hemisystole or asynchronism of systole in the ventricles while in anatomical union is denied by those who take this view. After a perusal of the conditions found at the necropsy we are inclined to believe that Dr. MORISON'S contentions are for the most part sound. We cannot, however, quite agree with him in assuming that after the fixation of the right heart the influence of the pulmonary factor in attracting and propelling the circulation played an important part and that the invasion of the lungs and diaphragm in the last phase of the case by new growth was one of the determining causes which shortened the life of the patient. The strength of the aspiratory and propulsive powers of respiration is considered by some observers not to be very great; if it were, engorgement of the right side of the heart would probably be more easily relieved than is actually the case. Dr. MORISON'S remarks on the action of the left chambers of the heart in this particular instance were noteworthy. He considered that the aspirative influence of the left auricle, while not by any means negligible, could not be regarded as having been great, and he therefore maintained that for a considerable period the left ventricle, "so largely unassisted except by the aid of the lungs," was sufficient efficiently to attract and to propel the circulation so as to avoid the evidences of retrograde stagnation. One of the most significant features of the clinical aspects of the case was the absence of the usual indications of back pressure and therefore the blood must have been propelled with sufficient force to insure the non-appearance of congestion or œdema, and considering the extensive invasion of the right side of the heart by the neoplasm the only conclusion to be arrived at was that the left ventricle proved equal to the work thrown upon it. A further point of interest in the pathology of the case was that the Hisian tract of primitive muscle near its origin which is credited with important conductive functions was destroyed by the invasion of new growth and yet left ventricular pulsation was not retarded, intermittent, or arrhythmical. The lecturer concluded that the sustained regularity of the left ventricle was most probably due to sufficient integrity of the cardiac nervous system which continued to control the various functions of the muscle fibre. This explanation would, we think, be generally accepted. Arguing still further on this line he suggested that death takes place, not from ventricular failure because cardiac motion from the veins and auricles towards the ventricles is blocked or prevented from reaching the latter with normal ease and regularity, but because the independent motile power of the ventricle has been abolished by failure on its own part to produce the necessary stimulus to contraction.

Dr. MORISON has succeeded in raising a number of important physiological and pathological questions in the course of the consideration of a single case. His address is an example of the valuable deductions which may be derived by the careful observation of clinical manifestations followed by a careful pathological investigation. To use his own phrase, it is an inquiry in regard to "cardiac motion as revealed by the vivisection of disease." It is but rarely, however, that such an opportunity as this presents itself, and if medical science was compelled to wait until sufficient evidence of this nature accrued in order to establish trustworthy evidence of the nature of cardiac action progress would be slow indeed. Thanks to experimental researches, however, corroborated by clinical studies such as those of JAMES MACKENZIE, GIBSON, and others, the knowledge of the physiology and pathology of the heart has been steadily advancing. The address was a most suggestive one and in it will be found ample material for much thought and cogitation. We have referred to only some of the points contained in it but there are others which are capable of giving rise to much discussion and differences of opinion. It is not easy, without prolonged deliberation, to deliver a definite verdict as to the correctness or otherwise of some of the physiological theories upon which its author touched but we feel that he may be congratulated upon a discourse prepared with great thought and care.

Design in Nature.[1]

IN the Middle Ages, and even before, there evidently existed a public desirous of reading or of obtaining information upon all subjects of knowledge. We have only to turn to the works of ISIDORUS HISPALENSIS for example, who in about the year 600 A.D. put forth his Libri XX. Etymologiarum. In the thirteenth century there were works by VINCENT of Beauvais who wrote the "Speculum Naturale"; THOMAS of Catimprato, author of the "De Natura Rerum"; and BARTHOLOMÆUS ANGLICUS who wrote the "De Proprietatibus Rerum." These works dealt with every form of knowledge as then known, and the late Dr. PETTIGREW'S gigantic treatise is worthy to rank with these monuments of human intellect. It is difficult to criticise the work of one who is now dead, neither do we pretend at present to have made an exhaustive study of the book. But a merely cursory examination of it reveals many features which, as the editors say in their preface, the author, had he lived to see the whole book in print, would probably have felt inclined to improve. The subject matter of the work is the old conflict, if indeed it be a conflict, between the evolutionary idea of the cosmos and the teleological view thereof. Dr. PETTIGREW is all for the latter view and for the existence of a First Cause. The protagonist of the other point of view is, of course, HAECKEL who starts with matter and energy and who will not allow the idea of a Demiourgos or of any Being who directs the Cosmos.

It is inconceivable, in our opinion, that any educated person can live in this world, can see the numerous manifestations of life around him, or witness the solemn daily and nightly procession of the stars in their wonderful order without feeling a conviction that there is a Power which dominates all this law. Men have called this Power by different names, and even when apparently not believing in other than materialism have either explicitly stated or have implied their belief in a power immanent in matter, or in some power according to which the affairs of the Cosmos are organised. Thus TYNDALL, in his famous Belfast address delivered in 1874 before the British Association for the Advancement of Science, said: "By an intellectual necessity I cross the boundary of the experimental evidence, and discern in that Matter which we, in our ignorance of its latent powers, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium, the promise and potency of all terrestrial Life." Even LUCRETIUS, whose whole life, so far as we know it, and whose great work was a passionate protest against Divine action in the Universe, and who laid it down as a primary law that—

> "Nam certe neque consilio primordia rerum
> Ordine se suo quaeque sagaci mente locarunt
> Nec quos quaeque darent motus pepigere profecto."
> —V., 419 et seq.

could also say—

> "Natura videtur
> Ipsa sua per se sponte omnia dis agere expers."
> —II., 1090 et seq.

which was a conception nearly allied to that of an all-governing Power (the gods to whom he objected were the interfering gods of Paganism) and no one has insisted more vehemently upon the fact of an all-pervading Law in Nature. Here LUCRETIUS stopped; he could not apparently connect these laws with a Power which, as MARTINEAU says, "thinks them progressively forth."

Dr. PETTIGREW'S thesis is the following. "I find everywhere in nature a well-ordered scheme, where everything, living and dead, fits into some other thing specially prepared to receive it. I observe law and order and specific arrangements and design throughout the entire cosmos. ..... The great rhythms of the physical universe are transferred in a multitude of ways to the vegetable and animal kingdoms; a circumstance of the deepest import, as showing that the inorganic kingdom is, in a sense, the parent of the organic kingdom, and that the two kingdoms are in complete accord, and complemental, even in matters of detail. All the movements in the inorganic and organic kingdoms are ordered, correlated, complemental movements. They bespeak a Creator, a Designer, an Intelligent First Cause." He develops his thesis by a review of Nature in general, of the laws according to which matter is distributed, of the manner in which it is distributed and of design as evidenced in inorganic and organic rhythms, of plants and animals and their organs as at present existing, of extinct animals (here we rather expected to find a reference to the Hoatzin, *opisthocomus*, an existing bird which possesses claws on its wings) and plants, and finally ends with a section upon the origin and career of man. In this last he takes the view that man was originally created perfect, degenerated, and finally ascended from his degenerate condition until his present state. Into this question we need not enter but we must give Dr. PETTIGREW every credit for the enormous mass of material which he has brought together as illustrating the argument for design. Not that there is anything new in the view that there exists a uniformity in Nature, for this argument has been put forward in all ages. But a great mass of the material collected by Dr. PETTIGREW was the outcome of his own painstaking researches, notably those on the spiral formation of the muscular layers of the heart and other organs, and, not to go into the insoluble question of how design came about, the evidence collected by Dr. PETTIGREW undoubtedly shows that design exists.

Unity and Law in Nature is a grand conception and it runs throughout the visible, or perhaps we should say the apprehensible, world. To take one example, the spiral and its many relations. The harmonics of a stretched string or of an open tube, say, in the key of C, run as follows up to the twelfth: C_1, C_2, G_2, C_3, E_3, G_3, B_3 flat, C_4, D_4, E_4, F_4 sharp (more or less), G_4, and so on. If these intervals be drawn out on a scale, the scale will be seen to coincide with the chief lines of the spectrum, counting from the violet as the bass end. It is the spaces and not the *vibration periods* which are considered. Further, if the intervals between the notes be taken as a foundation they will be found to give the depth of the elevations of the whorls of a "top shell." These analogies were the subject of an interesting paper by Mr. G. DYNE which appeared in Vol. XXXIII. of the *Theosophical Review*. Long prior to this, however, that wise and learned member of our own profession Sir THOMAS

[1] Design in Nature, by J. Bell Pettigrew, M.D., LL.D., F.R.S. London: Longmans and Co., 1908, three vols., price £3 3s. net, pp. 1413.

BROWNE had pointed out in his treatise "The Garden of Cyrus" how the quincunx and the spiral ran through nature, and to us, no less than it was to him, is his dictum true: "All things began in order, so shall they end, and so shall they begin again; according to the Ordainer of Order and mystical Mathematics of the City of Heaven."

Annotations.

"Ne quid nimis."

LUNACY IN THE METROPOLIS.

THE Asylums Committee of the London County Council in its nineteenth annual report, relating to the year ending March 31st, 1908, seems fully justified in asserting that the county has never been in a more favourable position as to asylum accommodation than at the present time. The total number of lunatics for whom the county was responsible on Jan. 1st, 1908, was 26,170, of whom 19,440 were in various county or other asylums, 6533 in the Metropolitan Asylums Board institutions, and only 397 in workhouses or residing with relatives or friends. The report states that "the small number (only 93 on Jan. 1st, 1908) of patients boarded out under reception contracts are all carefully selected, only those who have no known friends and who have not been visited for at least two years being sent away." On Jan. 1st, 1908, accommodation was available at the various London county asylums (excluding Claybury Hall, devoted to private patients) for 19,227 certified inmates, since which date an extension at the Manor Asylum has provided additional accommodation for 128 inmates; and at the date of the report still further accommodation for 527 patients was in course of erection at Colney Hatch and Manor Asylums, and the provision of a mental hospital for the treatment of 50 patients of each sex is being arranged. The Asylums Committee will therefore shortly have available accommodation for 19,982 inmates, apart from provision for an additional 240 at other county and borough asylums under reception contracts, or 20,222 in all. Thus, including the provision by the Metropolitan Asylums Board for 6533 inmates, there will shortly be available accommodation for 26,755 cases of metropolitan lunacy, showing an excess of 982 as compared with the number of cases under asylum treatment at the beginning of last year. The Commissioners in Lunacy have, it appears, been pressing upon the Asylums Committee of the London County Council the necessity for preparedness in the event of a further increase of lunacy, requiring the provision of further accommodation. In view, however, of the fact that the committee is at the present time fully abreast of the current requirements of the county for lunacy accommodation, it states in its report that "there are good reasons for not hurriedly deciding to provide additional beds which may hereafter prove unnecessary," more especially as the rate of increase of occurring lunacy in the metropolitan county has shown a decided decrease in recent years. It is, moreover, pointed out that the committee "cannot ignore the possibility of changes in the existing arrangements for lunacy administration which may result in bringing under one authority accommodation which is now administered by separate authorities—i.e., the Asylums Committee and the Metropolitan Asylums Board." Such a change would probably render available further accommodation, as provision made by the Metropolitan Asylums Board is not now occupied, the special class of patients for whom alone it is suitable not being now received by the Board. The Asylums Committee in its valuable report urges the necessity for the close and careful investigation of the "method of certification of pauper lunatics in London; of the adjudication and removal of patients not chargeable to London parishes and unions; and of the number of aged persons certified as lunatics." In all the circumstances of the case, therefore, the Asylums Committee has informed the Commissioners in Lunacy that it feels justified "in proceeding with the greatest care as regards the provision of accommodation for anticipated needs," and the committee's report and statistics appear fully to warrant such a decision. It should be noted that the number of the registered insane in the county of London on Jan. 1st, 1908, was equal to 5·50 per 1000 of the population, against 3·57, the mean proportion in the whole of England and Wales, thus showing an excess in London of no less than 54 per cent., which is probably to some extent due to the ample provision of asylum accommodation by the Asylums Committee of the London County Council. The amount of asylum accommodation provided by the London County Council may be relatively judged by the fact that on Jan. 1st, 1908, only 1·5 per cent. of the certified insane for whom the county is responsible were retained in workhouses or were residing with relatives or friends, whereas the mean proportion of the certified insane in England and Wales not under asylum treatment exceeds 20 per cent. Now that the amount of asylum accommodation for the county of London is fully equal to current requirements, and that practically all the metropolitan insane are under asylum treatment, a further decline in the rate of increase of the certified insane may be anticipated, more especially if the certification of workhouse cases of senile dementia, as insanity, can be checked.

THE HOSPITAL PROBLEM IN AUSTRALIA.

A STRIKING series of articles originally contributed to the *Melbourne Argus* by Mr. J. W. Barrett has been issued in the form of a pamphlet which, dealing with the hospital problem in the State of Victoria, reflects clearly the web of difficulty in which the hospitals of our own country are fast becoming entangled. The first paper shows by official statistics that in 1908 there has been an increase of 65 per cent. in the numbers of people attending the Melbourne hospitals as compared with 1898, and that the corresponding increase for all the Victoria hospitals has been 36 per cent., although the population of the colony has only increased 6 per cent. during the same period. Allowing liberally for overlapping and double entries of patients, nearly 1 in 11 of the people of Victoria and 1 in 7 of the citizens of Melbourne received hospital charity in 1907. The consequence is that as fast as new accommodation and increased funds are provided for their treatment, still more are required. Mr. Barrett proceeds to show that a class very different from the indigent poor is receiving hospital treatment to-day, and points out that if this is to continue unchecked the hospitals must become nationalised and staffed by State-paid officials and, in fact, be put on the same footing as the State schools. The levy of a "charity tax" would, he considers, dry up the springs of spontaneous charity and kill the humanising spirit which finds such splendid expression in voluntarily supported hospitals. Some of these institutions have been seeking to keep pace with the strain upon them by levying charges on certain of their patients, but Mr. Barrett holds that the parting of the ways has come and that the public must choose between national hospitals with an indefinite number of people claiming to benefit by them and a reversion to the purely charitable administration of hospitals for the real poor with the provision of contributory

institutions for those who could afford to pay in part for their medical treatment. He proposes the following scheme as a solution of the matter:—

1. The limitation of the out-patient advantages of a hospital to those who possess an income of £100 per annum or less.
2. The insistence on membership of a friendly society for those whose incomes are between £100 and £300 per annum.
3. The provision of intermediate hospitals, controlled by medical men, for those whose incomes are between £100 and £300 per annum and who require indoor medical treatment but cannot pay the fees incidental to a serious illness in their own homes.
4. The provision of a representative hospital board, with statutory powers, to generally control the metropolitan hospitals, to prevent overlapping or undue extension, to authorise the necessary inquiries into the circumstances of patients, and in general to control the working of the charities' system. One-quarter to one-third of the board to consist of medical men.

His first provision is commendable and his fourth has manifest advantages, especially as he recommends the creation of a body of representatives elected by the hospitals concerned rather than by a State-appointed body of paid commissioners. But in the second and third clauses there sounds the echo of the Battle of the Clubs. Mr. Barrett states that in Victoria for an annual payment of £3 5*s*. a member of a friendly society is entitled to free medical attendance and drugs for himself, his wife, and his family, with sick pay of 20*s*. weekly for six months, 13*s*. 4*d*. weekly for the next six months, and thereafter 10*s*. a week for life. This is a good form of insurance for the working man, but we should like to know what proportion of the annual subscription finds its way into the pockets of the medical officer of such a club. It seems probable that a general adoption of this scheme would relieve the hospitals largely at the expense of the general practitioner. But the problem is hydra-headed and Mr. Barrett gets near its heart when he looks to the prophylaxis of poverty and disease by the spread of sound secondary and technical education as the best means of fighting it. He suggests that if half of the legacies to hospitals were left instead to multiply educational facilities within a reasonable time the number of hospitals could be considerably diminished.

SIMPLE MEANS OF EXTINGUISHING OUTBREAKS OF FIRE.

THE results of the recent tests made at the instigation of the British Fire Prevention Committee should, in our opinion, be given the widest possible publicity. In these days of innumerable, and more or less ingenious, inventions there is a tendency to forget the value of classic and simple methods, yet which by their timely application may be the means of arresting serious mischief and disaster. In many ways there are still amongst us those who count "Abana and Pharpar, rivers of Damascus, better than all the waters of Israel." In how many offices and dwelling houses, for example, is the simple precaution taken of having a few filled water buckets at hand in the event of an outbreak of fire? And yet what great historic mansions with their priceless art possessions might have been saved by the timely application of a few pails of water had they been within easy reach. We do not detract from the value of the ingenuity which has been directed to the improvement of fire-extinguishing appliances, but the value of first-aid measures should not be forgotten. This is strikingly borne out in the report referred to. In a summary of the results of the tests the committee reports that the tests demonstrated that a small quantity of plain water (as distinct from chemicalised water) energetically applied from vessels in common use, such as buckets and simple hand-pumps, is almost uniformly effective in extinguishing promptly small fires in their early stages except in respect to burning spirit, such as petrol. The efficiency of plain water so applied, it is further reported, does not depend upon exceptional skill or dexterity in handling the vessels or appliances, but, given fair aim, is mainly affected by the amount of energy accorded to the operation of throwing or pumping respectively. As to the quenching of spirit or petroleum flames, it was shown that the application of asbestos cloths was very effective and fully demonstrated their great utility in subduing fires caused by spirit vapour. In trade processes in which a volatile and inflammable spirit is employed asbestos cloths would seem to be a most valuable first-aid appliance. Those who use and store petrol for motor-cars should benefit by the teaching of these experiments. Sand is useful also, inasmuch as in soaking up the spirit it renders it less inflammable. If a current of steam is available it seems to act very effectively in subduing flames even although there is plenty of ventilation, and in manufacturies where inflammable vapours are likely to escape and get ignited it is probable that a supply of steam turned on to the flames would be far more effectual in subduing them than would be a stream of water or even of a chemicalised solution. The British Fire Prevention Committee has earned the gratitude of the community for demonstrating such simple facts. As we have said, it is a peculiar human tendency oftentimes to look far afield for advantages when all the time they are lying within easy reach.

THE PATHOLOGY AND SERUM-THERAPY OF PLAGUE.

MUCH has been written during the last 12 years concerning plague chiefly by etiologists, bacteriologists, and administrators and but little comparatively on the other hand by clinical physicians. Recently, however, Dr. H. N. Choksy, the medical officer in charge of the Maratha plague hospital, has given, in an address to the medical profession in Bombay, the results of his ripe experience, more especially as regards the clinical characters of the disease and its treatment by serum. Up to the beginning of 1908 he has treated upwards of 13,000 cases of plague, and in addition to observing the behaviour of the disease in the patients under his charge he has in certain instances been able to follow the cases to the post-mortem room there to confirm or to modify the opinions which he had formed in the wards of the hospital. With such prolonged and unrivalled opportunities for observation no one can dispute the right of Dr. Choksy to speak on plague with authority as regards its clinical features, pathology, and treatment. The case mortality among the 13,023 patients treated by him was 74·50 per cent. But there were distinct differences in the case mortality among the various Indian races comprised in the population of Bombay. For example, the rate among Hindus was 76·57, while among Parsees it was 50·0. This difference is attributed by Dr. Choksy to the social conditions and environment of each race. The Parsee population lives habitually under far more favourable conditions than the Hindus and has developed therefrom a greater resistance to the onslaught of plague. The less satisfactory surroundings and mode of life among the Hindus, on the other hand, lessen their resistance and they therefore more easily succumb to the effects of this deadly malady. But it is with regard to treatment that the practical hospital physician is mostly concerned and in his address Dr. Choksy confines himself largely to a discussion of serum-therapy as offering the best chances to the patient of escape from death. In his hospital he has given a trial to no less than seven sorts of serum which have claimed to give beneficial results. In effect, however, he has reduced these to two—namely, the Yersin-Roux serum and that of Lustig. With one or other of these two sera he has treated 1739 patients during the last four years or so, the case mortality being 64·9 per cent., against a rate of 75·9 among those not treated in this way. Latterly Dr. Choksy,

who, we believe, at one time regarded Lustig's serum favourably, seems to have relied more upon the Yersin-Roux serum. With a view to giving it a thorough test he decided to apply it to each alternate patient admitted with plague to the hospital. But first he thought it necessary to exclude certain cases which were unlikely to derive any benefit, such, for example, as convalescents or semi-convalescents who would probably get well in any case; also cases in which illness had lasted more than six days, experience having shown that patients who have survived for that period are either too far advanced to obtain improvement by any treatment, or have really weathered the storm and begun to show improvement. With these preliminary exclusions every alternate case admitted to the hospital was treated with the serum. In this way 200 were inoculated and 200 were not, with the result that the former had a case mortality of 63·5 and the latter 74·0, a difference in favour of those treated by the serum of 10·5 per cent. This is hardly so great a difference as might have been expected but no doubt other disturbing factors were in operation; for example, a larger proportion of the less resistant Hindus in one class and a larger proportion of Parsees with higher powers of resistance in the other might easily have affected the figures either way. Dr. Choksy points out that care is necessary in seeing that the serum used is fresh and unaffected by climate or keeping; that it is administered at the earliest possible stage of the disease; and that it is given in appropriate doses. Intravenous injection would no doubt act more rapidly but this mode of application is more difficult than the subcutaneous method. In conclusion, he urges the avoidance of the use of alcohol, antiperiodics, antipyretics, or internal antiseptics, as well as purgatives in the treatment of plague. He deprecates the incision of buboes but does not object to total excision of the gland in the earlier stages of the disease, provided the serum treatment is also employed at the same time. Dr. Choksy's address, which has now been reprinted, is a highly interesting and practical contribution to the literature of plague.

THE ASSOCIATION OF PUBLIC SCHOOL SCIENCE MASTERS.

THE annual meeting of this association was held at the Merchant Taylors' School on Jan. 12th. The President, Sir T. Clifford Allbutt, delivered an address on the Functions of Science in Education. Mr. M. D. Hill (Eton) read a paper on Anthropometry in Schools, which was followed in the afternoon by a discussion upon Science Curricula in Public Schools, opened by Mr. G. F. Daniell who spoke on "The Report of the British Association upon the Sequence of Studies in Science." Amongst the readers of papers were Mr. R. G. Durrant (Marlborough) who advanced his views on the school teaching of chemistry in regard to the nature of solution, and Mr. G. H. Martin (Bradford) who considered the difficulties in teaching "Science for the Classical Side." Interesting as were these papers and the subsequent discussions, they had not such an important bearing upon the preliminary education of the medical student as had the paper by Mr. C. J. Gardiner (Cheltenham) which followed. Mr. Gardiner dealt with "The Refusal of the General Medical Council to recognise Public Schools as Institutions where Medical Education may be commenced." He presented the case for the schools forcibly and ably and commented on the anomalous position in which some of the medical examining bodies recognise certain public schools as fit places for the preliminary scientific education of the medical student whilst the General Medical Council refuses to recognise such training as part of the five years' curriculum. A motion was carried that the association should again approach the General Medical Council with arguments and urge it to reconsider its position in the matter. It will be apparent that the question raises several issues of vital importance to medical education and accentuates an unfortunate controversy. We hope to return to its consideration in a future issue.

A SIMPLE TEST OF THE ACTIVITY OF THE PANCREAS.

THE interesting observations which have been made in recent years concerning the functions of the pancreas both in regard to its digestive and its metabolic activities have served to direct attention to the diseases of that organ. The more careful study of the morbid changes in the pancreas, which practically dates from the brilliant pioneer work of Dr. Fitz in America, has revealed a variety of conditions occurring in that organ, some of which have proved to be capable of relief at the hands of the surgeon. Side by side with the advances made in regard to the morbid changes, increased attention has been devoted to a study of the symptoms and physical signs associated with them. The difficulties which are here of necessity encountered owing to the deep situation of the organ on the one hand, and the complexity of its functions and the difficulty of estimating the nature and degree of their derangement on the other, have made the investigation exceedingly complex. From time to time certain chemical tests have been elaborated and applied to the urine and fæces with a view to determine whether any of the functions of the pancreas were deranged. The discovery of the association between diabetes and disease of the pancreas was a noteworthy advance, but the facts that diabetes may own other causes and that glycosuria may occur under many conditions deprived this discovery of any great diagnostic value. Similarly the conditions of jaundice, of fatty stools, and of undigested proteid in the fæces, although evidence of grave disturbance of the digestive functions in the small intestine, cannot be taken as pathognomonic of pancreatic disease. The pancreatic reactions in the urine described by Dr. P. J. Cammidge are of considerable complexity and difficulty and require special experience for their performance. A simple method of estimating any of the functions in the pancreas is therefore very desirable and such Dr. H. Schlecht of Professor Strümpell's clinique at Breslau claims to have discovered.[1] The method is based upon an observation of Dr. Eduard Müller,[2] who showed that it was possible to demonstrate the presence of trypsin in the fæces by means of a serum plate. If a small quantity of fæces rubbed up with glycerine be placed on a serum plate and incubated at 55° to 60° C. for 24 hours a distinct depression results. Dr. Müller and Dr. Kaufmann observed this reaction almost invariably in an investigation of 200 cases. The amount of ferment in loose stools or in the motions in diarrhœa was found to be distinctly greater in quantity, which probably indicates that owing to the increased peristalsis the reabsorption or destruction of the ferment is hindered and as a consequence a larger amount is voided with the stools. As a result of a series of observations Dr. Müller concluded that this reaction was actually due to pancreatic trypsin and not to pepsin, to the proteolytic ferment of the leucocytes or to the action of bacteria. The application of this reaction to the diagnosis of pancreatic disease was carried out at the suggestion of Dr. Müller by Dr. Schlecht. He first confirmed the accuracy of the reaction by examination of 100 stools of patients of both sexes. He found, however, that in most cases the ferment was only present in small quantities. Physiological

[1] Münchener Medicinische Wochenschrift, April 7th, 1908, p. 725.
[2] Archiv für Klinische Medizin, 1908.

experiments showed that the amount of ferment in the lower part of the small intestine is considerable, whereas in the large intestine immediately beyond the ileo-cæcal valve the amount is very small. Purgatives were therefore given to attempt to increase the quantity, the routine being a glycerine enema followed by the administration of calomel and purgen. A small quantity of the resulting motion was rubbed up with glycerine to prevent drying when upon the plate, but it was subsequently found that with fluid motions this was unnecessary. As a rule the reaction of the fæces was alkaline; if it were strongly acid a sufficiency of weak sodium carbonate solution was added to render it feebly alkaline. After incubation of a small drop on a serum plate at 50° to 60° C. a small depression usually results in one to two hours, while after 24 hours a distinct cavity is obtained. In a case of tumour of the head of the pancreas confirmed by operation and associated with diabetes and cachexia this test gave entirely negative results, no digestion of the serum occurring. A similar observation was made in a case which presented the clinical characters of a tumour of the head of the pancreas in which no necropsy was obtained. In a marked case of catarrhal jaundice the digestive power of the fæces was extremely slight. In cases with markedly fatty stools it is necessary to extract the fat with ether, since the presence of fat in any quantity interferes with the reaction. In several cases of simple chronic constipation the amount of ferment obtained even in the loose motion after purgatives was found to be very small. In a case of poisoning by corrosive sublimate with markedly bloody stools no proteolytic reaction was obtained, this being due not to the absence of trypsin but as the result of an antiferment present in the blood serum. It is therefore necessary in carrying out the test to make certain of the absence of blood from the stools. A very feeble reaction was obtained from several cases of carcinoma of the stomach in which there was no mechanical obstruction to the secretory ducts of the pancreas, which would appear to indicate a diminished activity of the pancreas produced by the gastric disease or by the associated cachexia. The results obtained were confirmed by an experimental research in animals. Dr. Schlecht concludes that the method will prove to be of great value in virtue of its accuracy and simplicity. He suggests that it will be possible to use the test quantitatively by studying the effect of dilution of the fæces, or by titrating the ferment with the antiferment which is present in the blood, and he further promises to give later his own results obtained by these methods. The test itself is so readily carried out that it certainly should be employed in any case of pancreatic disease associated with obstruction of the ducts, since if its accuracy be confirmed it must prove to be a diagnostic means of considerable value.

THE TWELFTH INTERNATIONAL CONGRESS ON ALCOHOLISM.

THE Twelfth International Congress on Alcoholism will assemble in the Imperial Institute and other convenient public buildings in South Kensington, London, from July 18th to 24th, 1909. The Duke of Connaught, late Inspector-General of the Forces, is the honorary president and will be supported by an influential body of vice-presidents representing H.M. Government, both Houses of Parliament, the religious bodies of all denominations, the medical and legal professions, education and the universities, the national services, municipal and commercial life, and the organised temperance movement. A general meeting will be held each morning at which papers on the scientific, educational, legislative, social, and economic aspects of the alcohol problem will be submitted, and the specific aspects of these subjects will be considered in sectional meetings held in the afternoon or evening. Among those who have consented to prepare papers, which will be confined as far as possible to the most recent information upon their respective subjects, are the following: Dr. T. S. Clouston, Dr. F. W. Mott, Dr. W. H. R. Rivers, Sir T. P. Whittaker, and Professor G. Sims Woodhead. Further information can be obtained from Mr. John Turner Rae, at the general secretary's office, 34, Paternoster-row, London, E.C.

THE USE OF CHLOROFORM IN DENTAL OPERATIONS.

WE have again and again pointed out the high mortality which attends the administration of chloroform given for operations upon the teeth. When contrasted with the major procedures of surgery, such as excision of the maxillæ or the lower jaw, removal of the tongue and resection of the larynx, performed when the patient is fully anæsthetised with chloroform, dental operations carried out under the same anæsthetic appear to be many times more dangerous. A recent death illustrates this deplorable state of affairs. According to the *Isle of Wight County Press*, Nov. 8th, 1908, a girl, aged 15 years, was seen by the dental surgeon attached to the Isle of Wight County Hospital in the out-patient department and he deemed it wise that she should have all the teeth removed from the upper jaw. Three weeks later, at 7.45 A.M., the girl attended at the hospital and was examined by the house surgeon who considered she was in good health and discovered no reason for not giving an anæsthetic. Accordingly, the patient was taken to the operating theatre and given chloroform; a wire mask covered with lint was employed, this being the method in common use at the hospital. The house surgeon stated that he gave chloroform because "he thought deceased was perfectly sound." The girl took the chloroform "perfectly quietly and naturally." One and a half drachms of chloroform were used before anæsthesia was produced. "That was somewhat less than usual." The gag was inserted and the dentist removed one tooth, or, as he stated in his evidence, "one loose root of a decayed molar." The house surgeon then used "the inhaler" (what inhaler was not stated), the pupils dilated, and the patient died. Of course, all the usual measures for resuscitation were employed. The only alternative to the use of chloroform was, the house surgeon stated, repeated administrations of nitrous oxide gas. We are only concerned with this lamentable fatality in so far as it is typical of many such cases, deaths which would not occur if the use of chloroform were forbidden in minor surgery. It is hardly necessary to point out that at most special dental hospitals when a mouth has to be cleared of many teeth the method of nasal inhalation of nitrous oxide suffices for most of the requirements of the dentist's art. That every hospital is not furnished with the apparatus and that the young house surgeon does not know how to manipulate it are not, we submit, sufficient excuse for adopting a less safe method. When the issues of life and death are involved the cost of apparatus should hardly be entertained. A lack of knowledge may be a reason for not appointing a medical man to a house surgeoncy; it can, however, be none for the adoption of methods which the experience of 60 years has shown to be very far from safe when compared with those in use for nitrous oxide. But even when nitrous oxide is excluded the resources of modern anæsthetic methods are not exhausted. Profound narcosis obtained by ether and maintained at the required degree by the use of chloroform delivered through a mouth tube from a Junker's inhaler offers a comparatively safe method for dental work. Although we contend that chloroform should

not be used in dental surgical work save by a very experienced anæsthetist, yet if it be so employed surely the exact methods now rendered possible by the use of the Vernon Harcourt or kindred apparatus should be employed for the induction of anæsthesia, and the administration kept up by the mouth-tube. It has been pointed out so often that we almost shrink from labouring the point that danger from chloroform does not arise from the actual quantity evaporated from the lint; it proceeds from the too high concentration of the vapour. Many apparently trivial circumstances incidental to dental extractions may contribute towards producing too high a tension of chloroform in the circulation. If, for example, the patient is placed in a dental chair—we are not told about the posture of the girl in the case which we have cited—the brain rapidly grows anæmic under chloroform and in that state is rendered peculiarly prone to be overdosed. The depression of the mandible when a gag is inserted with the associated pushing back of the tongue, especially if the dentist puts his fingers across the mouth as is necessary in some extractions, leads to material interference with respiration. The lowered blood pressure induces a tardy flow of blood through the pulmonary vessels, the lessened or abolished expiration leaves the chloroform-laden air in prolonged contact with the blood stream, and as a result the chloroform tension in the blood rapidly rises and toxæmia is produced. Syncope, whether initiated in the coronary vessels or in the nervous mechanism of control, must result from this procession of events; death then follows upon the effort to alleviate a minor ailment, than which surgery offers no more terrible a calamity. It is manifestly wrong that such events should happen if the resources of our art can prevail against the threatened dangers. It is a matter of history that deaths under chloroform during dental practice are common and usually arise when inexperienced persons are giving the anæsthetic and when unscientific methods are pursued. Knowing the dangers it seems not difficult to prevent them. We have indicated some ways. However, the greatest danger has yet to be met and this is the want of general recognition that chloroform, as commonly given, is really an unfit anæsthetic for trivial operations. The careful man who has habitually employed methods now antiquated and has never lost a patient cannot understand the danger when a less skilful hand controls the vial of anæsthetic. The possible incidence of fatigue, haste, pre-occupation, nervousness, and we fear at times harrying of the young house surgeon by his senior officer who finds a perhaps unduly slow and cautious house surgeon too tardy for his scant leisure, are always possible dangers and may cause a fatality at any time when other factors making for peril coexist. It is very hard upon the young house surgeon that he should on the very threshold of practice be called upon to face single-handed the grave responsibilities of anæsthesia and should be compelled in many cases to adopt methods which he knows are fraught with danger because those in authority will not obtain adequate apparatus and do not insist upon the adoption of rational procedures in the hospitals over which they hold sway. It is also a very grave responsibility to deal with human life without duly weighing the dangers to it which arise from inexperience and inadequate outfit.

CAUSATION OF PNEUMONIA.

ALTHOUGH it is now generally recognised that the pneumococcus is the pathogenic organism of pneumonia the etiological factor which causes that organism to take on a virulent action is not perfectly clear. The effect of cold air is accepted by many authorities as being generally responsible for the commencement of an attack, but certain morbid states, of which the most important is probably influenza, also exert a strong predisposing influence. In *La Semaine Médicale*, Nov. 4th, 1908, it is reported that at a meeting of the Société Médicale des Hôpitaux M. Widal mentioned the cases of a husband and wife who contracted pneumonia within a few hours of one another, the cause apparently being (according to M. Widal) that they had both drunk water the previous day from a well instead of that from the main water-supply which they were accustomed to use. The course of the disease in the two persons was similar and the temperature curves so much alike that the one might have been taken for the other. It seemed to M. Widal that it was impossible to suppose that one of these patients had infected the other, as the invasion of the attacks was separated by a very few hours, and the only conclusion at which he could arrive was that the water which the two patients had taken had contained pneumococci. Considering the investigations which have been made in regard to the bacteriology of pneumonia we much doubt if M. Widal's contention can be sustained. We should suggest that the patients had been exposed to some other common cause, such as a sudden change of temperature, which had initiated the onset of the disease.

SPANISH ANTI-MEDICAL PROVERBS.

IT might be laid down as an axiom that wherever the standard of civilisation is very low there will hatred of the medical profession be found to flourish. In a primitive country, such as Spain, for instance, the anti-medical proverb would seem to be frequently on the lips of the people. "Great men and doctors," says one such, "are alike in this—that the first-named are not more ashamed of the sorrows entailed by their faults than are the last-named of the deaths of many of their patients." "May God preserve you," says the "Filosofia Vulgar" of Juan de Mallora, "from the lawyer's flourish (under his signature), the notary's *et cetera*, and the physician's prescription." "Physicians and surgeons," says a terrible quatrain, "do not attend high mass because the buried cry out, 'Ah, there goes my assassin!'" Another popular verse, as full of local colour as the last, avers that "he who desires long life should flee to the best of his ability from physicians, apothecaries, cucumbers, melons, and women." A third verse describes the man who has nothing to do with medical men as either escaping scot-free or dying by the hand of God, whereas the man who delivers himself into their hands has an executioner and pays him dear (*un verdugo y bien pagado!*). The French, according to MM. Witkowski and Cabanès, from whose entertaining "Gayetez d'Esculape" our quotations are taken, were formerly almost as ferocious as the Spaniards in their anti-medical proverbs. Thus they assert—

> "Les médecins et les marechaux
> Tuent les gens et les chevaux.
> Fy de la pute médecine,
> Qui l'homme à mort enchemine."

"It is better to be judged by physicians," runs another old Gallic saw, "than by the Provost Marshal," the idea being that the former may occasionally spare a man's life whereas the provost marshal always hangs his victim. To the mediæval Latin, common to the whole of Europe, we owe such satiric phrases as "Ubi tres medici, duo athei," and "Invidia medicorum pessima"—medical jealousy is the worst of all. It is to the credit of England that there appear to be no anti-medical proverbs in the language, and this despite the fact that our less reputable journals are for ever trying to intensify such proletarian prejudices as find expression in the *clichés* that vivisection involves torture of animals and that hospitals exist chiefly for the purpose of experimenting on the poor. It would seem indeed as though

the medical profession already commanded the popular respect in that dim past when the body of our proverbs was forming.

"DOLLY REFORMING HERSELF."

IN Mr. Henry Arthur Jones's witty and merry play with this title a very amusing example is given of popular conceptions and popular usage of scientific propositions. The action of the play turns largely upon the possibility of Dolly, the aggravating and engaging heroine, eliminating from her behaviour certain embarrassing traits which she considers to be due to "a lack of the money sense" and which her husband attributes to reckless extravagance having its origin in a senseless love of display. A learned professor is made by Mr. Jones to parody, with no violent strain upon their possible interpretation, the doctrines of Lombroso in such a way that Dolly can shelter herself behind the convenient theory that she is not a free agent, that she is born a spendthrift. Mr. Jones, aware that this sort of psychology will not stand the strain of application to the facts of life, brings the situation home to the professor by placing him in the dilemma of either having to pardon his wife for a flirtation which has passed the limits of discretion or of having to arraign her before the courts for an offence of which, in accordance with his own philosophical tenets, she is guiltless—as she is helpless to resist her innate cerebral impulses. Mr. Jones has drawn his caricature of the scientific man who has become a mere, or perhaps we should say a dangerous, faddist with great skill, although with a burlesquing pen, and the gravity with which the professor's dicta are received by the various members of society with whom he is brought into contact forms a shrewd satire upon the bland receptivity of the public for extreme views. The professor would have everyone support life upon some sort of vegetable powder, and it is a fact that quite a large number of the public could easily be persuaded to such a diet because of its sweeping simplicity, and their faith in its virtues would gather support from articles in the very newspapers which spend much time and ingenuity in throwing doubt upon the proven truths of medicine and the perfectly reasonable theories of scientific therapeutics.

THE DEPARTMENTAL COMMITTEE ON THE MIDWIVES ACT.

THE Departmental Committee appointed by the Lord President of the Council included two members of the medical profession, Dr. F. H. Champneys, chairman of the Central Midwives Board, and Dr. A. H. Downes, one of the two medical inspectors for Poor-law purposes of the Local Government Board, and no one could possibly take any exception to the presence of either of these gentlemen on the committee. Each of them represents most important interests but it is nevertheless the fact that the Act is not actually administered either by the Central Board or by the Poor-law officers but in most districts by medical officers of health. It might have been expected therefore that at least one member of the public health service would have been placed on the committee. One of the least observed rules of the Central Board, certainly in country districts, is that which refers to the proper disinfection of a midwife after attendance upon a puerperal patient or after coming in contact with any infected person and upon this question alone the presence of some one well acquainted with the administration of the Public Health Acts will be invaluable. A further blot on the constitution of the committee is the absence from its counsels of any member of the medical profession engaged in general practice. It was obvious to us from the first that the committee would have to be strengthened and we had hoped that room for at least two more members would have been found upon it. No general practitioner, however, has been asked to reinforce its constitution, but a county medical officer of health, Dr. F. E. Fremantle, medical officer of health of the county of Hertford, has now been invited to join. Dr. Fremantle is in touch with the many sides of the midwives question which affect the general practitioner particularly, and his appointment will be regarded with general favour for this reason.

THE report of the Departmental Committee appointed to inquire into the operation of the law relating to inebriates and to their detention in reformatories and retreats, under the chairmanship of Sir John Dickson-Poynder, Bart., M.P., has just been issued. It contains 40 recommendations, of which the first and second are crucial, for they suggest the repeal of the Inebriates Acts, 1879 to 1899, and the passing of an Act consolidating, amending, and extending the law relating to inebriates. They further define an inebriate as "a person who habitually takes or uses any intoxicating thing or things, and whilst under the influence of such thing or things, or in consequence of the effects thereof is—(*a*) dangerous to himself or others; or (*b*) a cause of harm or serious annoyance to his family or others; or (*c*) incapable of managing himself or his affairs, or of ordinary proper conduct." The remaining recommendations are concerned largely with the judicial appointment of guardians for such persons and their detention in special institutions. We hope to deal with the report at some length in a future issue.

THE Morison lectures of the Royal College of Physicians of Edinburgh will this year be delivered in the College Hall, 9, Queen-street, by Dr. F. W. Mott, F.R.S., at 5 o'clock P.M., on Monday, Jan. 25th, Wednesday, Jan. 27th, and Friday, Jan. 29th, the subject being "Syphilis of the Nervous System in the Light of Modern Research."

Dr. Robert Jones has been elected to succeed Dr. T. Claye Shaw as lecturer on mental diseases at St. Bartholomew's Hospital and he has therefore resigned a similar post at the Westminster Hospital Medical School which he has held for some years.

A TELEGRAM from the Acting-Governor of the Mauritius, received at the Colonial Office on Jan. 10th, states that for the week ending Jan. 9th there were 2 cases of plague and 1 death from the disease.

ANNUAL REPORT FOR 1907 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

Sir Shirley F. Murphy has just published his sixteenth report on the health and sanitary condition of the area under his supervision in the year 1907. As in the case of his previous contributions to the literature of State Medicine, so in the present case, we have nothing but commendation for the manner in which his facts are marshalled or for the assiduity with which he inculcates sometimes unpalatable lessons on the local authorities under the jurisdiction of the County Council. In both respects the volume before us fully maintains the high character of its predecessors.

For the convenience of readers Sir Shirley Murphy divides the subject-matter of his report into well-defined sections. The first section treats in considerable detail of the vital statistics of the metropolis, the second section gives particulars of sanitary administration generally, and although, for reasons given in the text, the closely related subject of

elementary education is only briefly alluded to in the present report, we shall be disappointed if in future years a definite additional section is not included in the county medical officer's report dealing with this important branch of his Council's administration. That something of the kind is in contemplation we gather from a passage in the present report, from which it appears that the Board of Education now requires that the report on the medical inspection of school children should relate to the calendar year and not to the 12 months ended April 1st. Hence the annual report of the medical officer of education for 1907 will be appended to Sir Shirley Murphy's next annual report.

In a memorandum under the Education Act of 1907 on the Medical Inspection of School Children the Board of Education states that it desires to emphasise that this new legislation aims not merely at a physical or anthropometric survey or at a record of defects disclosed by medical inspection, but at the physical improvement and, as a natural corollary, the mental and moral improvement of coming generations. The main principle, the recognition of which the Board regards as absolutely necessary for the development of administration on sound lines, is "that school hygiene cannot be divorced from home hygiene, and that this in turn is intimately bound up with the hygienic conditions of the community. Efficiency and economy require, therefore, an organic relationship between the daily work of the school authority and of the authority responsible for the administration of the wider branches of public health." The Board expressed the opinion that "in county areas the county council, which is the local education authority, should instruct their county medical officer, who will be responsible for smooth and effectual administration, to supervise the work, its actual execution being deputed to suitable medical colleagues who either will be appointed under him or will be local medical officers of health, and to whom groups of schools may be allocated ..... that is to say, generally speaking, the work of inspection should be supervised by the medical officer of health of the authority which appoints the education committee; and when the work is obviously more than he can undertake unaided it should be entrusted to one or more medical officers working under his supervision."

Reverting to Part I. of Sir Shirley Murphy's report, which occupies the greater part of the volume, we may remark that it forms an admirable model for adoption by the official custodians of the health of other populous communities; whilst for those who aspire to the attainment of a special qualification in State Medicine we can imagine no fitter guide than this to the practical handling of vital statistics and their proper application to the problems of public health.

In his opening remarks Sir Shirley Murphy gives particulars of the London rates of marriage, birth, and death, all of which were lower in 1907 than in any previous year on record; but as these matters have already been discussed in the annual summary of the Registrar-General further reference to them here is unnecessary. In dealing with the local incidence of mortality and its distribution at the several stages of life Sir Shirley Murphy contributes information which is not to be found elsewhere. By a skilful use of the life table method the effect on the London population of fluctuations in mortality at the various ages is well shown. This method was first applied to London mortality statistics in the year 1901, in which year advantage was taken of the recent census to construct a new life table for the metropolis. In order to give effect to this mode of treating mortality it is necessary in the first place to ascertain the mean future lifetime of males and females in groups of ages corresponding to those age groups to which the deaths relate. For this purpose a series of tables is presented in the report to which only passing reference can now be made. In one of these tables the number of deaths in 1907 is compared with the number that would have occurred had the death-rates in the previous decennium been maintained in that year. The salvage in the latter period is expressed in terms of "*life capital*," which is obtained by applying the mean future lifetime at each age to the number of lives gained at the same ages. Calculated in this manner it appears that in the year 1907 there has been in London a saving of 22,146 lives, representing a gain to the community of 905,505 years of "life capital." Referring to the enormous differences still obtaining in the mortality of the several metropolitan boroughs Sir Shirley Murphy tells us that in the year 1907 the borough of Shoreditch had a death-rate that was more than double the rate of Hampstead, which, as in past years, still experiences the lowest death-rate in the metropolitan area. In view of these wide differences he proceeds to compare the "life expectation" of the two districts—in other words, to translate their mortality rates into figures showing expectation of survival at certain ages, and thus to demonstrate by an approximately correct method the remarkable differences in the vitality of the populations concerned. With the help of the last census returns these two districts are next compared with respect to their "social condition," using for this purpose the proportion of domestic servants employed in each community. In Hampstead the percentage of domestic servants to families, or, in census phrase, "separate occupiers," was as high as 81·4, whilst in Shoreditch it did not exceed 5·7. Again, the proportion of the population living more than two in a room in tenements of less than five rooms was in Hampstead 6·37 per cent., whilst in Shoreditch the proportion was 29·95 per cent. These differences in the character of the populations of the two areas now referred to are reflected, not unfaithfully, in the mortality statistics, which show that on the average of the last seven years the total mortality of the population at all ages was 11·1 per 1000 in Hampstead and 21·2 in Shoreditch; whilst the mortality of infants in their first year, in terms of births, was only 90 per 1000 in the first-mentioned district, although it amounted to 173 per 1000 in the other district. The effects of the conditions adversely affecting longevity are strikingly exemplified in the series of tables. From them it appears that the "expectation of life at birth" in Shoreditch is nearly 16 years less than in Hampstead, and at each successive stage of life the figures relating to these districts are in marked contrast. After making due allowance for the disadvantages which it suffers by reason of its position and its social status Sir Shirley Murphy insists that the Shoreditch figures clearly prove how much still remains to be done for the physical improvement of that community, notwithstanding the advances which have already been made in this direction. For it must be remembered that the population of Shoreditch is but a sample of a much larger population in London and elsewhere whose mortality rates are excessive from causes which are largely preventable. The death-rates of several of the large metropolitan boroughs closely approximate to those of Shoreditch, and the results of translating these rates into terms of life expectation would probably be as unfavourable as those of Shoreditch have been shown to be in comparison with Hampstead.

Judged by the mortality experience of the last five years it appears that the conditions which adversely affect longevity in Shoreditch are operative at all stages of life and that the effect of these conditions varies with each age-period. Thus, comparing the mortality of males in the two communities, we learn that out of 1000 born in Shoreditch 301 die before reaching their fifth year, whilst in Hampstead out of 1000 born only 149 die before reaching the same age. Again, out of 1000 children aged five years in Shoreditch 32 die before reaching the fifteenth year, whilst in Hampstead the corresponding number is 22. At ages 25–45, when the economic value of life is at its maximum, the difference in the two communities is most conspicuous. Thus, of 1000 males aged 25 years living in Shoreditch 208 die before reaching the age of 45 years, while the corresponding figure for Hampstead is only 111.

To the subject of infantile mortality Sir Shirley Murphy has devoted considerable space in his report. By means of a diagram he shows the infantile mortality of London in each year since 1857 in relation to the mean mortality of the period 1858–1907, and also the infantile mortality in each year after exclusion of the deaths from premature birth, which in his judgment will be affected by the more complete registration of recent years, in greater degree than will the deaths from any other causes. In the decennium last ended, as well as in the year 1907, London experienced a lower infantile mortality than did any other of the larger English towns except Bristol. In order to show the variation of infantile mortality in the several sanitary areas of the metropolis a table has been prepared in which the rates for the metropolitan boroughs in 1907 are compared with the averages in the preceding five years. From the column of average rates we note that 11 of the county boroughs experience an infantile death-rate which is in excess of the mean for the

metropolis, the mortality among them ranging from 136 in Deptford to 152 in Poplar, 153 in Southwark, 156 in Bermondsey, 159 in Finsbury, and 167 in Shoreditch. Among metropolitan boroughs with rates below the mean may be mentioned Lewisham, where the rate was 109; Stoke Newington, 113; Westminster, 115; and Hampstead, where it was lowest, 90; in each case the rates are stated in terms of registered births. In order to indicate the effect of social condition on infantile mortality at successive stages of the first year of life a table is given in which infantile mortality is shown in relation to overcrowding in groups of sanitary districts, the term overcrowding being used to apply to that portion of the local population living more than two in a room, according to the last census returns. The table shows a marked difference in the mortality of young children when the least and the most crowded groups of districts are contrasted; and this difference is even more pronounced when the later "trimesters" of the first year are placed in comparison. For example, if the infant mortality of the least overcrowded districts be taken as 100, the mortality of the most overcrowded districts will be represented by 175. In connexion with the provisions of the Children Protection Act the subject of the suffocation of infants in bed has received recent attention. This Act provides for a substantial penalty where it is proved that the death of an infant under three years of age was caused by suffocation whilst in bed with an adult "under the influence of drink." From a table we gather that whilst in districts where the percentage of over-crowding does not exceed 7·5 per cent. the death-rate from suffocation in bed is only 157 per 100,000 births, in districts where the overcrowding exceeds 27·5 per cent. the suffocation death-rate is represented by 524 in the same number born.

(To be continued.)

THE BOMBAY MEDICAL CONGRESS.

AN Indian Medical Congress is to be held in Bombay from Feb. 22nd to 25th inclusive under the presidency of Brevet-Colonel the Hon. Sir George Sydenham Clarke, G.C.M.G., G.C.I.E., governor of the city. We understand that the Congress owes its inception to his Excellency who takes a great interest in its organisation. The vice-presidents are the Hon. Mr. J. W. P. M. Mackenzie, C.S.I.; the Hon. Mr. J. L. Jenkins, C.S.I.; Surgeon-General Sir Gerald Bomford, K.C.I.E., Director General of the Indian Medical Service; Surgeon-General F. W. Trevor, C.B., Principal Medical Officer, H.M. Forces in India; the Hon. Sir W. C. Hughes, C.I.E.; and Mr. W. D. Sheppard and Mr. H. G. Gall, M.V.O. The general secretary is Lieutenant-Colonel W. E. Jennings, I.M.S., Marine Lines, The Fort, Bombay, and the assistant secretary is Captain E. F. G. Tucker, I.M.S. The central committee includes representatives of all the medical, surgical, and hygienic services, associations, and colleges in India, as well as of the various government and medical scientific departments of governments.

The Congress will confine its attention to the special problems of disease and sanitation in India and the work will be transacted in five sections, all of which will be housed in the University buildings. Section I. will be under the presidency of Surgeon-General A. T. Sloggett, C.M.G., A.M.S., and will deal with Cholera, Dysentery, Enteric Fever, and Tropical Diarrhœa. Section II. (Surgeon-General H. Hamilton, C.B., I.M.S., President) will discuss Malarial Fever, Plague, Leishman-Donovan Body Invasion, and Relapsing Fever. Section III. (Surgeon-General P. H. Benson, V.H.S., I.M.S., President), Animal Parasites and Disease Carriers, Snake Venoms, Beri-beri, Mycetoma, Leprosy, and Elephantiasis. Section IV. (Colonel C. J. Bamber, I.M.S., President), Disposal of Sewage in India, Water-supplies, Disinfection, and Naval and Marine Hygiene, including Quarantine. Section V. (the Surgeon-General with the Government of Bombay, President), Ophthalmic Surgery, Vesical and Renal Calculi, and Miscellaneous Papers on Tropical Surgery. A sixth section will include an exhibition of medical, surgical, and sanitary appliances, foods, drugs, and demonstrations of specimens and lantern slides of medical interest.

Papers have been received or promised from many distinguished medical men, some of whom intend to be present, including Professor Kitasato, Professor Ronald Ross, Colonel D. Semple, R.A.M.C., Major C. Donovan, I.M.S., Major G. Lamb, I.M.S., and Major Leonard Rogers, I.M.S.

The committee will hold a conversazione in the Exhibition grounds on Feb. 23rd. Various Indian railway companies are offering travelling facilities at reduced rates for the occasion. The committee will publish papers accepted by the Congress in the form of transactions, which it is hoped will form a valuable contribution to tropical medicine. A design has been approved for a commemoration medal to be struck in silver by the Bombay Mint, by permission of its master; the obverse will depict the goddess Hygieia and the reverse the Anopheles mosquito.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 15th, 1831.

THERE are two classes of aurists in this country, *stationary* and *sham*, or *vagrant* aurists. This last class is part and parcel of the numerous miscellaneous and irregular vagabonds under various medical denominations, who are tolerated by law and custom in this island. The *vagrant aurist* pursues exactly the same system as the *vagrant oculist*. The plan of both is to cure slight cases for the lower orders, draw up gross exaggerations of the cases in whole columns of the newspapers, and make the patients pay for them in return for the benefit received. By this method these swindlers lay hold of numerous and even respectable dupes from all parts of the surrounding country, whilst they silence the provincial press, which, for the most part, has reached the lowest pitch of infamy, servility, and venality, and prevent the publication of exposures by the indirect bribery of the advertisements. I offered Mr. Wright's very proper "caution to the public" respecting these vagabonds to a provincial paper, in a neighbourhood where one of them was prowling about; but the newspaper people refused to insert it, because they considered exposures of quackery offensive to the public taste. The announcement of their extraordinary cures by *coup de main* generally runs under the title of Doctor, or Mr. So-and-So, in sundry great towns, "where he intends to delay his stay for a few weeks longer," &c. Among these trampers is a *woman-aurist*, who heads her advertisements with a woodcut of a large ear and its organs. To reason against such rank imposture is superfluous, since of all derangements, universal experience has proved that none, under the most able individuals who have given particular attention to the subject, are more immoveably stubborn, and less frequently treated with success, than cases of deafness. It is part of the admirable system of medical legislation in France, which is an example to every other country, and which, ere long, in the present day of rational reform, I trust, will be copied in all its leading points in this country, that all quacks, under the denomination of aurists, or any denomination whatever, are seized by the police, and shopped[1] up in jails by no means so comfortable as our voluptuous houses of correction. Moreover, no encouragement is given by court appointments to any superfluous subdivisions of the profession. Whoever takes upon him as aurist or oculist must have been regularly educated previously as physician, surgeon, or *officier de sante*. But the assumption of such appellations as "surgeon-oculist," "surgeon-aurist," is considered in that case extremely degrading, and whoever assumes them is excluded by law from the concours for the election of *agreges* and from all public appointments. None but *officiers de sante* grace their sign-boards with these names, and they are a denounced and repudiated body. In England there is no means of extirpating quacks, whether rogues, vagabonds, strollers, or otherwise, except only the London press, which, by promulgating such remarks as these in their columns, can always accomplish a great deal for the public safety.[2]

[1] The word "shopped" is no doubt here used in its slang sense of "imprisoned."

[2] Excerpt from "Practical Observations on the Pathology and Treatment of Deafness" by John Fosbroke, M.D., M.R.C.S., N.R.P.S. Edin. (*sic*), &c. The author states that "They formed the subject-matter of an inaugural thesis at Edinburgh; but to have published them in that form, would have been to throw whatsoever was useful in them into a vault." Dr. Fosbroke practised at Cheltenham.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 9035 births and 5535 deaths were registered during the week ending Jan. 9th. The annual rate of mortality in these towns, which had been equal to 12·8 and 18·2 per 1000 in the two preceding weeks, declined again to 17·5 in the week under notice. During the 14 weeks of last quarter the annual death-rate in these towns averaged only 14·9 per 1000, and in London the mean rate during the same period did not exceed 14·3. The lowest recorded annual death-rates in these towns during last week were 10·0 in Newport (Mon.), 10·2 in York, 10·4 in Hornsey, and 10·5 in East Ham; the rates in the other towns ranged upwards, however, to 23·7 in Oldham, 25·4 in Great Yarmouth, 27·2 in Middlesbrough, and 27·3 in Hanley. In London the recorded death-rate during the week was equal to 18·0 per 1000. The 5535 deaths from all causes in the 76 towns showed a decline of 133 from the high number in the previous week, and included 450 which were referred to the principal epidemic diseases, against 402 and 497 in the two preceding weeks; of these 450 deaths, 229 resulted from measles, 62 from diphtheria, 52 from diarrhœa, 45 from whooping-cough, 32 from scarlet fever, and 30 from "fever" (principally enteric), but not one from small-pox. The deaths referred to these epidemic diseases in the week under notice were equal to an annual rate of 1·4 per 1000, against 1·3 and 1·6 in the two preceding weeks; in London the recorded rate from these diseases was equal to 1·5 per 1000. No death from any of these epidemic diseases was registered during the week in South Shields, Birkenhead, Walsall, Hornsey, or in six other smaller towns; the annual death-rate therefrom, however, ranged upwards in the other towns to 4·3 in Leicester, 4·9 in Great Yarmouth, 5·8 in Warrington, and 6·9 in Middlesbrough. The fatal cases of measles in the 76 towns, which had been 163 and 231 in the two preceding weeks, were 229 in the week under notice, and caused annual death-rates equal to 2·8 in Hull, 2·9 in Great Yarmouth, 4·0 in Middlesbrough, 4·1 in Leicester, and 4·3 in Warrington. The 62 deaths from diphtheria showed a decline of 20 from the high number in the previous week; the highest death-rates from this disease were 1·2 in Rochdale and 1·3 in Reading, and 22 fatal cases were recorded in London and its suburban districts. The 52 deaths attributed to diarrhœa were fewer by ten than those registered in the previous week. The 45 fatal cases of whooping-cough differed but slightly from the numbers in recent weeks; the highest death-rate from this disease was 2·0 in Great Yarmouth. The 32 deaths from scarlet fever were within two of the number in the previous week, including 13 in London and its suburban districts, four in Liverpool and Bootle, and 11 in Manchester and Salford. The deaths referred to "fever," which had averaged 40 in the three preceding weeks, declined to 30 last week, of which eight occurred in London, five in Manchester and Salford, three in Leeds, and two in Bristol. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had been 3463 and 3557 on the two preceding Saturdays, had declined to 3347 at the end of the week under notice; the new cases of this disease admitted to these hospitals during the week under notice were 323, against 303 and 379 in the two preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had averaged but 307 in the three preceding weeks, rose to 422 in the week under notice, but were 65 below the corrected average number in the corresponding week of the five years 1904–08. The causes of 64, or 1·2 per cent., of the deaths registered in the 76 towns during the week were not certified, either by a registered medical practitioner or by a coroner. All the causes of deaths registered during the week under notice were again duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, and in 45 other smaller towns; the 64 uncertified causes of death in the 76 towns last week included 15 in Liverpool, eight in Birmingham, six in Sheffield, and three in Rochdale.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 16·6, 16·1, and 17·4 per 1000 in the three preceding weeks, further rose to 19·5 in the week ending Jan. 9th. During the 14 weeks ending on Jan. 2nd the annual death-rate in these eight towns averaged 15·5 per 1000, and exceeded by 0·6 the mean rate during the same period in the 76 English towns. Among the eight Scotch towns the death-rate during the week under notice ranged from 13·4 and 15·2 in Leith and Aberdeen to 24·9 in Dundee and 27·9 in Perth. The 698 deaths registered in the eight towns last week showed an increase of 76 upon the number returned in the previous week, and included 70 which were referred to the principal epidemic diseases, against 51 and 60 in the two preceding weeks; of these 70 deaths, 33 resulted from whooping-cough, 20 from diarrhœa, seven from diphtheria, five from scarlet fever, four from "fever," and one from measles, but not one from small-pox. These 70 deaths were equal to an annual rate of 2·0 per 1000, exceeding by 0·6 the mean rate during the week from the same diseases in the 76 English towns. The 33 fatal cases of whooping-cough in the eight Scotch towns exceeded the number returned in the previous week by ten, and included 25 in Glasgow and four in Aberdeen. The 20 deaths attributed to diarrhœa were within two of the number in the previous week; seven were returned in Glasgow, five in Edinburgh, three in Dundee, and two both in Aberdeen and Paisley. The seven deaths from diphtheria also showed a slight decline, but included five in Glasgow. Of the five fatal cases of scarlet fever, three occurred in Glasgow and two in Dundee. The four deaths from "fever," of which three were returned in Glasgow and one in Edinburgh, included two certified as enteric and two as cerebro-spinal meningitis. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 101, 115, and 120 in the three preceding weeks, further rose to 129 in the week under notice, but were 76 below the number returned in these towns in the corresponding week of last year. The causes of 29, or 3·1 per cent., of the deaths registered during the week in the eight towns were not certified; in the 76 large English towns during the same week the proportion of uncertified causes of death did not exceed 1·2 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 17·2 and 28·3 per 1000 in the two preceding weeks, declined again to 23·6 in the week ending Jan 9th. During the 14 weeks ending on Jan. 2nd the death-rate in the city averaged 20·5 per 1000, whereas the mean rate during the same period did not exceed 14·3 in London and 14·4 in Edinburgh. The 180 deaths of Dublin residents during the week under notice showed a decline of 34 from the high number registered in the previous week, and included 16 which were referred to the principal epidemic diseases, against six and 12 in the two preceding weeks. These 16 deaths were equal to an annual rate of 2·1 per 1000; the rate from these diseases in the same week did not exceed 1·5 in London and 0·9 in Edinburgh. Of the 16 deaths from these epidemic diseases in Dublin last week nine resulted from measles, four from "fever," and three from diarrhœa, but not one from scarlet fever, diphtheria, whooping-cough, or small-pox. The fatal cases of measles and of "fever" showed an increase upon the average numbers returned in recent weeks. The 180 deaths from all causes during the week included 27 of infants under one year of age and 53 of persons aged upwards of 60 years. Two inquest cases and one death from violence were registered during the week; and 73, or 40·6 per cent., of the deaths occurred in public institutions. The causes of five, or 2·8 per cent., of the deaths registered in Dublin last week were not certified; the proportion of uncertified causes of death in London last week did not exceed 0·2 per cent., while in Edinburgh it was equal to 4·3 per cent.

INSPECTION OF SCHOOL CHILDREN AT FALMOUTH.—Dr. A. Gregor, the medical officer of health of Falmouth, who is also medical inspector under the education authority, in his annual report states that out of 361 children examined 165, or 45·7 per cent., were found to have defects.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon: R. H. J. Browne to the *Implacable*, on recommissioning. Staff-Surgeons: E. D. J. O'Malley to the *Implacable*, on recommissioning; and R. L. Dickinson to Plymouth Hospital. Surgeons: A. W. Iredell to Plymouth Hospital; L. F. Cope to the *Victory*, for temporary service; and T. W. Jeffery to the *Dwarf*, additional, and on recommissioning.

ARMY MEDICAL SERVICE.

Colonel Philip M. Ellis to be Surgeon-General, vice W. B. Slaughter, retired (dated Dec. 31st, 1908). Lieutenant-Colonel Richard Jennings, from the Royal Army Medical Corps, to be Colonel, vice P. M. Ellis (dated Dec. 31st, 1908).

ROYAL ARMY MEDICAL CORPS.

The appointment of administrative medical officer at Devonport, which becomes vacant on Jan. 25th, when Colonel W. J. R. Rainsford, C.I.E., completes his period of service, is to be filled by the appointment of Lieutenant-Colonel R. Jennings who is at present serving at Portsmouth.

Captain Philip G. Easton, from the Indian Medical Service, to be Captain, vice Hugh G. S. Webb, who exchanges (dated Nov. 28th, 1908).

SPECIAL RESERVE.

Royal Army Medical Corps: Captain William Henry Gerard Herbert Best, from the late Royal Army Medical Corps (Militia), to be Captain (dated Sept. 20th, 1908).

TERRITORIAL FORCE.

Royal Army Medical Corps.

For attachment to Units other than Medical Units.—The undermentioned officers, from the 4th Battalion, The Cheshire Regiment, to be Captains (dated Dec. 1st, 1908): Surgeon-Captain Conrad Theodore Green and Surgeon-Captain Andrew Robertson Wilson. Allan Douglas Low to be Lieutenant (dated Nov. 11th, 1908).

Highland Mounted Brigade Field Ambulance: The undermentioned officers, from the Seaforth and Cameron Bearer Company, Royal Army Medical Corps (Volunteers), are appointed, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Major John Macdonald and Lieutenant John William Mackenzie. Archibald Craig Balfour to be Lieutenant (dated April 1st, 1908).

1st Home Counties Field Ambulance: Captain John M. Rogers-Tillstone to be Major (dated April 27th, 1908).

1st East Lancashire Field Ambulance: Lieutenant Cecil W. Hutt, from the 3rd East Lancashire Field Ambulance, to be Lieutenant (dated Sept. 22nd, 1908).

3rd East Lancashire Field Ambulance: George Aubrey Jelly to be Lieutenant (dated Sept. 22nd, 1908).

1st London Field Ambulance: Captain (Honorary Captain in the Army) Edmond William St. Vincent-Ryan to be Major (dated Jan. 9th, 1909).

Surgeon-Captain Frederick Burroughs Jefferiss, from the 4th Volunteer Battalion, The Queen's Own (Royal West Kent Regiment), to be Captain, with precedence as in the Volunteer Force (dated April 1st, 1908). Surgeon-Captain Charles Kessick Bowes, from the 1st Volunteer Battalion, The Buffs (East Kent Regiment), to be Captain (dated April 1st, 1908). Arthur Cyril Bird to be Lieutenant (dated August 12th, 1908).

Unattached List.—Lieutenant Herbert Hugh Blair Cunningham, Reserve of Officers, to be Captain, for service with the Belfast University Contingent, Senior Division, Officers' Training Corps (dated Nov. 30th, 1908). Captain and Honorary Major Edward William Prevost resigns his commission, with permission to retain his rank and to wear the prescribed uniform (Dec. 2nd, 1908).

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Jan. 12th, Sir J. N. Dick, K.C.B., in the chair, the sum of £70 was distributed among the several applicants.

A RUMOUR AND ITS CONTRADICTION.

The rumour that Sir Alfred Keogh, Director-General of the Army Medical Service, will presently receive a certain colonial governorship has been circulated with much detail, even the fact that Surgeon-General W. L. Gubbins, Deputy Director-General, may succeed him at the War Office being added. The information is given under some reserve by the *Army and Navy Gazette* in its issue of Jan. 9th, where it is also suggested that "when any change is made in the office of Director-General, the very high claims of a certain P.M.O. of the widest experience and repute should certainly not be overlooked." There is no foundation in the story whatever, and we are glad to say that Sir Alfred Keogh remains at the head of the Army Medical Service.

Correspondence.

"Audi alteram partem."

A CASE OF EXCISION OF THE SCAPULA.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Jan. 9th Mr. H. B. Mylvaganam records an interesting case of excision of the greater part of the scapula for sarcoma. While wishing to congratulate him upon the success of his operation I should like to criticise some of his statements. He refers to my account[1] of a patient shown before the Royal Society of Medicine on Feb. 4th, 1908. My patient had a large enchondroma of the scapula. As the tumour was not malignant I removed only the body and spine of the scapula, preserving the glenoid cavity and the coracoid process in one piece, together with the ligaments holding the coracoid process to the clavicle and to the acromion process, which was also saved. The shoulder-joint and the various muscles attached to the processes were thus saved. I was so much impressed with the favourable result following this operation that I took some trouble to compare it with those usually following excision of the entire scapula or where only the acromion is left. As a result of my investigations I claimed "that, for suitable cases, excision of the body of the scapula with preservation of the processes and glenoid socket is a much better operation than excision of the whole bone, because it leaves a limb far more perfect from the functional and artistic points of view." Mr. Mylvaganam doubts this and thinks that the advantages claimed are more theoretical than material. No one who has seen my patient will be inclined to agree with him upon this point. Even a glance at the comparative photographs and radiograms illustrating my paper suffices to show the striking advantages of the conservative operation, both as regards the function and the appearance of the shoulder (*vide* Fig. 1–8). The difference in the degree of *voluntary abduction* and *the greater flattening and falling of the shoulder* following the complete excision are well shown.

May I suggest that similar photographs and radiograms of Mr. Mylvaganam's patient would be very valuable and instructive for comparison. I am not quite clear as to the amount of voluntary abduction retained by his patient, for the following extracts from his account are somewhat vague and contradictory: "I removed the whole of the scapula with the exception of the acromion process for a case of sarcoma, and the functional results were as good as those of his case with the exception only of abduction, which was only possible in my case to an angle of 90 degrees, but in Mr. Rowlands's case the patient was able to abduct the limb to a right angle." I take it that the "90" is a misprint, otherwise the sentence is meaningless. In the report of Mr. Mylvaganam's case it is stated that "abduction was very much limited and painful. ..... The utility of the joint had not been impaired. ..... Free abduction was not possible on account of the head of the humerus jamming against the thoracic wall, and the pain was probably due to its pressure on the brachial plexus or its branches." My patient, who is still at work as a painter's labourer at Guy's Hospital, can abduct his limb sufficiently for him to do overhead work and paint ceilings, &c., without any pain. The coraco-clavicular and coraco-acromial ligaments prevent the bones from falling in and pressing on the brachial plexus. Mr. Mylvaganam states that "in total excision the arm can

[1] Brit. Med. Jour., March 28th, 1908.

also be abducted to 90 degrees." But his case is not one of *total* excision, the acromion being left in the body. I agree that when this process is left the power of voluntary abduction is greater than after complete excision. I also maintain that additional advantages are gained by saving the glenoid socket attached to the coracoid process.

Mr. Mylvaganam fears that necrosis of this piece of bone may develop from want of blood-supply. I do not think this risk is one to be seriously considered. If asepsis is carefully maintained the collateral circulation is quite capable of nourishing the bone. Mr. Mylvaganam believes that "the retention of the glenoid fossa and the coracoid process must be a disadvantage, because the fragment is not likely to supply that firm support necessary for the easy movement of the head of the humerus, as in the normal joint, but is likely to move bodily with the head of the humerus acting as a new head, or a traumatic or infective synovitis may take place in the joint and lead to adhesions between the articular surfaces. In such an eventuality the rough edge of the sawn-off fragment cannot be said to offer the best articulating surface for the movement of the humerus. On the contrary, the movements will be limited and attended with a certain amount of pain."

Now a glance at my figures (5 and 7) will prove that the humerus does in actual fact move to a very considerable extent upon the glenoid cavity in my patient. I do not claim that the joint is as good as a normal shoulder-joint. The socket is suspended from the clavicle by the strong and hypertrophying conoid and trapezoid ligaments and attached to the acromion and thus to the outer end of the clavicle by means of the coraco-acromial ligament. Therefore the socket does not fall, nor does it sink in towards the chest to the extent one would have expected from a casual consideration. Moreover, both heads of the biceps, the coraco-brachialis, and the long head of the triceps serve to keep it in apposition with the head of the humerus when the latter is more or less fixed from below as in carrying and lifting weights. The rough edges of the neck of the scapula are overlapped by the soft structures around, and they are soon smoothed away by nature in the usual way. In my case they caused no inconvenience, but Mr. Mylvaganam frankly states that his patient had pain, probably due to pressure of the head of the humerus on the brachial plexus or its branches. In conclusion, Sir, I maintain that Mr. Mylvaganam's able and interesting paper, although it is vague in some respects, tends to confirm the view that it is an advantage to save the acromion process whenever it is safe to do so. It, however, fails to prove his assertion that it is a disadvantage to save the glenoid socket and the coracoid process in one piece, together with their ligamentous supports and most of their muscular attachments.

I am, Sir, yours faithfully,

Queen Anne-street, W., Jan. 11th, 1909. R. P. ROWLANDS.

EXOPHTHALMIC GOITRE AND RHEUMATOID ARTHRITIS.

To the Editor of THE LANCET.

SIR,—In your report in THE LANCET of Dec. 26th, 1908, of the Royal Society of Medicine's proceedings I noted with interest that Dr. E. I. Spriggs in the Clinical Section showed a case of exophthalmic goitre with rheumatoid arthritis. The coexistence of these two diseases is more frequent, I believe, than is generally allowed. As a result of experience gained at the Royal Mineral Water Hospital, Bath, I published in the *British Medical Journal* of May 2nd, 1903, an article entitled "Graves's Disease in Association with Rheumatoid Arthritis," in which I recorded 14 cases of rheumatoid arthritis showing in addition the four cardinal symptoms of exophthalmic goitre (i.e., proptosis, tremor, enlarged thyroid, quick pulse), also six examples of the incomplete or larval type of the latter in the same association. In the former group all were of the female sex but of the latter two were males. In the majority of the examples the two affections as far as could be ascertained arose contemporaneously, but in a few the Graves's syndrome either preceded or was engrafted upon the rheumatoid condition. Rapid cardiac action, as we know, is a feature of some cases of rheumatoid arthritis, and when, as I have seen, the quick pulse is accompanied by one or more of the cardinal symptoms of Graves's disease, it is difficult to determine whether the accelerated pulse rate is a feature peculiar to the former or one due to a larval manifestation of the latter.

It is interesting and possibly significant of some obscure pathological relationship that many of the so-called secondary features of Graves's disease occur frequently in the subjects of rheumatoid arthritis, and, moreover, in cases where none of the cardinal features of Graves's syndrome are present, such as pigmentation, localised sweatings, fleeting œdemas, and vaso-motor phenomena. Again, disturbances of the digestive and genito-urinary system are not infrequent in both, likewise emaciation, not to mention the interesting coincidence that mental shock and worry often figure prominently in their respective previous life histories. In Still's disease slight degrees of exophthalmos have been noted, and I may add that Diamantberger, in his treatise on Rheumatoid Arthritis in Children, states his belief that there exists some affinity between Graves's disease, rheumatoid arthritis, and myxœdema.

I note that the President, Sir Thomas Barlow, when discussing Dr. Spriggs's case stated that he had met with an instance in which a woman with indications of myxœdema presented signs of oncoming rheumatoid arthritis. Macalister of Liverpool has recorded a similar but much more marked instance in which both the myxœdematous and arthritic conditions were remarkably benefited by thyroid medication. In view of the modern tendency to regard rheumatoid or atrophic arthritis as distinct from osteo-arthritis or hypertrophic arthritis I would state that all the cases reported by myself in this connexion were of the former type and the same holds good of most of the recorded instances, with the exception of one of Blake's cases, in which the woman, primarily the subject of Graves's disease, afterwards developed osteo-arthritis and later on symptoms of myxœdema. In conclusion, the list of examples above cited by no means exhausts the number of cases recorded of the coexistence of rheumatoid arthritis and exophthalmic goitre, and having regard to the comparative frequency of the association I am inclined to agree with Dr. Garrod that the overlapping of the two affections is something more than a "chance coincidence."

I am, Sir, yours faithfully,

R. LLEWELYN JONES, M.B. Lond.,
Late Resident Medical Officer, Royal Mineral Water Hospital, Bath.

Bath, Jan. 8th, 1909.

THE CAUSE AND PREVENTION OF DENTAL CARIES.

To the Editor of THE LANCET.

SIR,—As I started the recent correspondence on this subject perhaps you may not think it altogether unfitting that I should close it. Your correspondents appear all to be agreed that the essential cause of dental caries is a faulty system of feeding; in other words, that the evil can be greatly reduced, indeed, practically eliminated from the race, by resort to proper dietetic methods. It now remains for the medical profession to act upon this important truth. It is no exaggeration to say that by so doing incalculable good—I say this deliberately—may be effected, for not only dental caries and its many secondary evils but (I, at least, am convinced) a host of other diseases—e.g., pyorrhœa alveolaris, "adenoids," and appendicitis—are in large measure due to the same unwise system of feeding as that which is responsible for dental caries.

I sometimes think that we are becoming so intoxicated with scientific, terribly scientific, learning, so bewildered by all the "ologies," as to be in danger of losing our common sense. No serious student of evolution can doubt that the medicine of the future will be essentially preventive. Surgery owes her greatest triumphs to Listerism—and what is Listerism but a system of prevention, a keeping of the enemy outside the gates? Medicine owes her greatest triumphs to sanitation, and will achieve still greater triumphs by extending the range of prophylaxis—by checking the multiplication of the unfit, by hunting such grim terrors as syphilis from off the face of the earth, and last, but not least, by enforcing physiological methods of dieting. I am convinced that medicine has as much to gain by wise methods of dieting as surgery has gained by Listerism, and that any appearance of exaggeration which this statement may bear is

due to the fact that the evil resulting from unwise dieting does not follow so swiftly, so obviously, and so dramatically as that resulting from the surgeon's neglect of aseptic precautions.

There has been some discussion as to whether Dr. Sim Wallace or the late Mr. A. Coleman was the first to insist upon the evil effects resulting from insufficient use of the teeth. I feel sure that this is a matter of complete indifference to Dr. Wallace. The idea that the teeth may suffer from insufficient use must have occurred to many independently. If I remember rightly both Herbert Spencer and Alfred Russell Wallace have given expression to it, and I have certainly myself been imbued with this notion for many years. The fact remains, however, that it was reserved for Dr. Wallace to bring home to the dental profession the great truth that dental caries can be prevented by a proper system of dieting, which consists not only in giving the teeth plenty of work to do, but in having due regard to the order in which certain articles of food are taken—a truth the adequate application of which would not merely decimate, but eventually almost annihilate, the ranks of the dental profession. It has further to be observed that while Mr. Coleman, living as he did before the propagation of Weismann's teachings, held that the teeth of civilised man were, owing to the supposed inherited effects of disuse, becoming with successive generations less and less resistant to disease, Dr. Wallace is emphatically opposed to such a view. On the contrary, he urges that modern civilised man starts life with as good dental potentialities as any of his ancestors, and that dental caries (and I would add, with certain reservations, pyorrhœa alveolaris also) is essentially the result of an improper system of feeding.

I would like to say a word, in conclusion, about the giving of sugar to children. In my former letter I urged the need of caution in this matter, but I omitted to mention a point of considerable practical importance. I owe the hint to Dr. Wallace. When sugar is taken it is apt to adhere to the teeth and, by undergoing fermentation, to injure them. This adhesive tendency is well shown by such a sweet as chocolate, the dark particles of which show distinctly on the teeth for some time after consumption. Now the best way, according to Dr. Wallace, of removing the sugar from the teeth is by eating raw fruit—e.g., apples, oranges, or bananas. Jams and other sweet things should, he tells us, never come last in the meal, but should be followed by raw fruit. Otherwise the child should always be made to wash his teeth after eating sugar or very sweet foods.

I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 3rd, 1909. HARRY CAMPBELL.

To the Editor of THE LANCET.

SIR,—I should like to thank the editor of the *Dental Surgeon* for having again referred to Mr. A. Coleman's views because they seem still further to emphasise the fundamental difference between the old dietetic theory of the etiology of dental caries and the new. For if Mr. Coleman had not held a theory of inherent degeneracy in the teeth of man—a theory which I entirely repudiate—he would surely have seen that his remark with regard to the teeth of animals was also true with regard to the teeth of man. The point is of great practical importance, because the older theories of causation gave rise to such recommendations regarding diet as are to be found in Mr. Coleman's manual, whereas the new theory of causation gave rise to a totally different set of recommendations, which may be found epitomised in my communication to THE LANCET of Sept. 12th, 1908.

I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 2nd, 1909. J. SIM WALLACE.

STANDARDISATION OF DISINFECTANTS.

To the Editor of THE LANCET.

SIR,—May we be allowed, without unduly abusing the hospitality of your columns, to deal as briefly as possible with the points raised in the recent correspondence arising out of a letter of Messrs. McDougall Bros., printed in THE LANCET of December 5th last? We venture to affirm that the fact of Mr. J. T. Ainslie Walker being the managing director and consulting chemist of our company does not necessarily incapacitate him from being a capable bacteriologist and chemist, or involve the necessity for dishonourable practices in the conduct of our business. He owes his position in our service to our appreciation of his work, just as Mr. C. T. Kingzett and other chemists owe theirs to a like appreciation by the several companies or firms with whom they are connected.

As regards Messrs. McDougall Bros., we are still corresponding with their solicitors and must observe the reticence that position entails. We may state, however, that with a courtesy they certainly did not invite, we, on Dec. 3rd, informed them of the source of the samples tested by us, showing that they were not of an obsolete production, and they have not so far accepted our offer to demonstrate the accuracy of our test.

Messrs. Newton, Chambers, and Co. do not specify the disinfectants to which they refer as behaving unsatisfactorily in "natural water." Any small difficulty arising owing to exceptional "hardness" of water in certain districts is quite easily overcome as regards our disinfectants.

Mr. C. T. Kingzett, on behalf of the Sanitas Co., is, of course, entitled to his opinion of "the so-called Rideal-Walker test." Few will agree with him that dilution with sea water is an essential, but he will be interested no doubt to know, as regards cyllin which he names, that we can, and do, supply to municipal authorities and sanitary officials who use sea water a crude cyllin specially made for that purpose which behaves exactly like "izal" and "okol" and is of nearly equal coefficiency with our ordinary cyllin. Whether the advantage we claim for disinfectants which maintain their homogeneousness is ill-founded and illusory is again a matter of opinion, but Mr. Kingzett must be aware that many Government and municipal authorities demand this condition when making contracts, and that many hospitals and other institutions prefer—greatly prefer—a mixture which disinfects for several days, to a mixture which does not.

As regards Dr. Rideal's letter, your footnotes thereon, and Mr. A. Wynter Blyth's letter, may we observe that what Dr. Rideal wrote was perfectly true with no *suggestio falsi*. Why the council of the Royal Sanitary Institute, after approving and adopting the report of the scientists they had appointed as a special committee of inquiry (as to our knowledge they did) did not finally adopt it nor proceed with further inquiries, is best known to that body and to Mr. Wynter Blyth, the chairman of the committee.

For the rest, while we regret that so many of our business competitors should see cause for a combined attack, we are not ashamed of having done our best for many years to bring to an issue the merits of disinfectants that do not disinfect. When, as mentioned by Dr. Rideal, we offered to pay the entire cost of the Royal Sanitary Institute inquiry sooner than it should not take place, we certainly held the opinion that the result would be beneficial to our business, while affording us the gratification of being in a measure public benefactors by curtailing the sale of worthless preparations. We were then, as now, quite alive to the fact that all vendors of honest disinfectants (among whom we with pleasure include many, but by no means all, of our competitors and critics) would share the benefits we hoped to obtain. No sympathy surely can be felt with the cruelty of selling useless disinfectants, and certainly until a better one is devised the Rideal-Walker test, fairly and honestly utilised, is useful and salutary, and, be it observed, this test has been largely favoured by official recognition all over the world. As we have before written, any better one, when it comes, will be heartily welcomed by us.

Your obedient servant,

(By order of the Board),

For JEYES' SANITARY COMPOUNDS CO., LIMITED,

WM. PLANNER, Secretary.

Cannon-street, E.C., Jan. 7th, 1909.

UMBILICAL HERNIA IN INFANTS.

To the Editor of THE LANCET.

SIR,—It is recognised that umbilical hernia in infants may be due to congenital or acquired causes, and my reason for discussing the question now is that I have noticed a considerable and increasing prevalence of the condition in certain districts and I wish to state what appears to me to be the main cause and the method of preventing it. In the

following remarks reference will be made only to the acquired form.

While doing temporary work in a Yorkshire district some three or four years ago I noticed many cases among infants, but the fact that it was advisable to make any special mention of it did not then occur, but quite recently while on temporary duty in a district in South Wales, I again observed the frequency of the complaint, and in a week saw eight to ten cases in a town of some 70,000 inhabitants. That such a number should be seen in a few days, while examining the abdomen of infants in various illnesses must indicate that the condition is exceedingly prevalent in this centre. I have also recently noticed its prevalence in a London district. On considering the cause I may say that I always make the inquiry as to who attended the mother at the birth of the child, and I can only recall an instance here and there in which such has occurred among infants who were attended by medical men, but its incidence is almost invariably among those who were attended by nurses or professional midwives. It thus appears that some method in vogue among the latter, but not among the former, is probably the cause, and this I believe is so, the direct reason being that the practice of midwives and nurses is to cut the cord too close to the abdominal wall. Having known the custom among a number of medical practitioners with regard to this point I can say that their habit is to divide the cord at from one and a half to two and a half inches from the umbilicus. With regard to the old order of nurses, I have personally been requested to cut it short as it saves trouble. The question then arises, Is it the practice amongst the present-day midwives to sever the cord closer to the abdominal wall than medical men, and, if so, is it done for the reason that it is best or satisfactory or for the reason of saving trouble? Before going further into this point it is necessary to consider something of the physiological process by which the aperture in the abdominal wall is closed and the umbilicus is formed. The latter is situated at the junction of the lower two-fifths and the upper three-fifths of the linea alba, and it is formed partly by the contraction of the fascia of the linea alba and partly by remnants of the funis. The centre of the umbilicus is said to be composed of the fibrous remains of the vessels,[1] and it goes without saying that they are those that were in that portion of the funis left attached to the child's abdomen after its severance. The question then occurs, How much of the funis should be left in order that a firm and unyielding umbilicus may be found in the child?

On studying this question it seems that a different opinion is held by writers on midwifery and that their view differs somewhat from that which is the custom among practitioners. One well-known author states that the cord may be severed at ½ or 1 inch from the umbilicus;[2] another says 1½ inches;[3] others say about 1½.[4] While hesitating to question the opinion of any acknowledged authority on the subject of midwifery, I may be allowed to state that I believe the division as near the abdominal wall as ½ or 1 inch is inadvisable and that its severance should be at a point of more than 1½ inches from the umbilicus rather than less, the best position being 2 to 2½ inches from the abdominal wall. That a portion of the funis is needed for the closure of the aperture is admitted, and I can account for the prevalence of umbilical hernia in infants in no other way than that the practice of midwives is to divide the cord too near the abdomen. If such is the case, there can be no satisfactory reason unless they have been instructed to do so—and whether this is the case I am not in a position to say—as if there were any additional trouble connected with the longer funis, such should not be considered when the danger of inducing a weakened condition of the abdominal wall is taken into account. Although it is the fact that such herniæ as a rule tend to undergo cure the projection, which has been likened to the finger of a glove, would be far better prevented, and when it occurs may in some instances lead to umbilical hernia in late adult life, and in other cases cause a defect in the abdominal wall and thus tend to diminish the strength of an important structure of the body, and one on which the maintenance of the sound health of the individual is largely dependent. In conclusion, I may state that the condition of which I have written occurs among infants in whom none of the usual causes of acquired umbilical hernia are present, as phimosis or a narrow meatus.

I am, Sir, yours faithfully,

Oxford, Jan. 5th, 1909. A. STAYT DUTTON.

[1] The Diseases of Children (Ashby and Wright), fifth edition, p. 165.
[2] A Manual of Midwifery (Galabin).
[3] Manual of Midwifery (Fothergill).
[4] The Science and Practice of Midwifery (Playfair) and Manual of Midwifery (Eden).

DRAINAGE IN CAIRO.

To the Editor of THE LANCET.

SIR,—An idea is current in England that active drainage operations are in progress in Cairo and that there is therefore much disturbance of soil and tearing up of the streets. Such is not the case; a main drainage scheme has been approved, but the work has not yet commenced nor will much be done for some time. The sewage farm in the desert will have to be done first. Cairo will not therefore be affected for probably some years. The principal hotels are all drained on the septic tank system and this has worked well. There need therefore be no fear that the health of Cairo has been altered by any drainage works. Diarrhœa is also supposed to be common amongst newcomers, but if greater precautions were taken to avoid chill to the abdomen, especially about sunset, this could largely be avoided. In addition to this I always advise my patients not to take green salad, as in any hot country raw vegetables are unsafe to eat.—I am, Sir, yours faithfully,

LLEWELLYN PHILLIPS, M.D. Cantab.,
Cairo, Jan. 2nd, 1909. M.R.C.P. Lond., &c.

EPSOM COLLEGE.

To the Editor of THE LANCET.

SIR,—Like many others probably I have often been told that all medical men are gentlemen and *rich*, but experience teaches one that nearly all medical men not possessed of incomes other than professional are for their social position decidedly poor. Probably few, even at the top of the tree, after their expenses are deducted have a margin equal to that of a tolerably successful tradesman, whilst the incomes of the rank and file are being continually reduced by unfair hospital and club abuse, and the reduced incomes themselves are of less purchasing power owing to the continual rise in price of commodities and rates and taxes. I have for long maintained, like "Honorary Local Secretary" in THE LANCET of Jan. 9th, that the widows and orphans of medical men, if a charge upon anyone, should be maintained by the public, for whom the medical profession work night and day, often dying at their posts, for incomes which are absurdly below their deserts or even bookings. I should like to see hospital physicians and surgeons more careful in avoiding hospital abuse, and whenever opportunity offered putting in a word for the two medical charities—the British Medical Benevolent Fund and Epsom College. The former institution always appeals to my support in preference to the latter because the unfortunate applicants for relief are not put to the expense of canvassing for support. One is always pleased to see legacies of thousands of pounds left to hospitals for the benefit of the *deserving* poor, but I cannot help thinking that some of our leaders in the profession might secure legacies of substantial amounts for our medical charities.—I am, Sir, yours faithfully,

A. PHILLIPS HILLS,
Honorary Local Secretary, British Medical Benevolent Fund.

Battersea Park, S.W., Jan. 11th, 1909.

THE REMOVAL OF ERYTHEMA FROM THE FACE ("RED NOSE") BY THE PROLONGED INTERNAL ADMINISTRATION OF ADRENALIN.

To the Editor of THE LANCET.

SIR,—The fact that adrenalin is regarded as one of the strongest vaso-constrictors induced me to try its usefulness by internal administration in cases of erythematous taches of the face ("red nose"). I have made observations on three cases; two of them, demonstrated to the Kharkoff Dermatological Society in 1907, were students of the University, aged

24 and 27 years, and the third was a young lady aged 23 years. In all three cases the adrenalin was given internally in doses of five minims of solution adrenalin chloride (Takamine) 1 in 1000 in a teaspoonful of water three times daily half an hour before food. The remedy was continued during five to six months, with short intervals of one or two weeks, and had a remarkable effect on the erythema, which almost entirely disappeared. Up to now, a year and a half after treatment, the redness has not reappeared, and no bad effect on the heart or blood pressure has been observed.

I am, Sir, yours faithfully,

Kharkoff, Jan. 1st, 1909. Dr. Med. E. A. ROTHMANN.

THE ETIOLOGY OF CARCINOMA CERVICIS.

To the Editor of THE LANCET.

SIR,—In your annotation in THE LANCET of Jan. 9th referring to my paper read at the Harveian Society on Dec. 10th it is stated that Dr. Comyns Berkeley and I had performed 20 radical abdominal operations (Wertheim) for carcinoma of the cervix with four deaths. This is incorrect. Up to the reading of that paper we had performed 28 of these operations with four deaths. Will you kindly publish this correction? Very faithfully yours,

Harley-street, W., Jan. 9th, 1909. VICTOR BONNEY.

*** We have pleasure in publishing the correction.—ED. L.

"AN INDEX OF TREATMENT."

To the Editor of THE LANCET.

SIR,—We thank you for the appreciative notice of the above volume in your issue of this date. We feel, however, that when you say "we should hardly have thought that keeping the book up to date by frequent issues would have necessitated four editions within 12 months," and further suggest that "a better plan in future would be to print an edition large enough for requirements not more than once a year," some readers will infer that we purposely sent out small issues with a view to multiplied editions. This touches us on a tender spot. We may not be leaders amongst medical publishers, but we have always most distinctly set our faces against what is a crying evil of to-day (though, we are glad to think, less prevalent among British than some foreign houses) of issuing what are known as "faked" editions of works with fresh title-pages but no true claim to be new editions, the object being obviously to create a false impression.

This is not so in our case. Each edition of the "Index," it was thought, would be sufficient for about 18 months' demand. In order, however, to be perfectly clear may we state that the first edition consisted of 2500 copies plus 1500 for America revised in dosage by the U.S.A. Pharmacopœia, the second and third editions 1000 copies each, while the fourth and present issue is 2000 copies, of which at the moment of writing about half have been disposed of.

If you can kindly find room for this explanation we think it will clear us from any unjust suspicion of lack of straight dealing. It seems only fair to editors and contributors alike to make it understood that the appearance of so many impressions in so brief a period is solely because up to now the demand for this volume has exceeded the anticipations we had any of us formed of it.

We remain, Sir, yours faithfully,

Bristol, Jan. 9th, 1909. JOHN WRIGHT AND SONS, LTD.

ROYAL MEDICAL SOCIETY OF EDINBURGH.—At a meeting of this society held on Jan. 8th, Dr. A. C. B. McMurtrie read a paper on Hæmaturia. At the outset he touched upon hæmoglobinuria, relating the conditions under which blood pigment might be found in the urine. Passing on to hæmaturia proper Dr. McMurtrie gave a very clear and complete account of all the conditions affecting the genito-urinary tract which might be associated with the presence of blood in the urine. In some of these hæmaturia was present almost as a rule; in others it was a comparatively rare occurrence.

RECONSTRUCTION OF THE GLASGOW ROYAL INFIRMARY.

(FROM A CORRESPONDENT.)

THE scheme for the reconstruction of the Royal Infirmary has been before the public for nearly ten years and it seems as if now it were fairly under way, as one of the ward blocks is nearing completion and the north half of the gatehouse or admission block will be ready for occupation in a few months. The reconstruction when complete will involve a total expenditure of £500,000 and the new infirmary will accommodate 660 patients.

Before commencing building operations the managers of the infirmary remitted the plans to hospital experts, as is now usually the custom, with a view of getting any suggestions which they might think advisable for the improvement of the plans in detail or as a working whole. The experts chosen in this case were Sir Henry C. Burdett, K.C.B., K.C.V.O., and Dr. Donald J. Mackintosh, M.V.O. The plans as modified by them represent a modern up-to-date hospital and contain certain novel features of interest. It must be recollected that both the architects and the experts have been hampered to a certain extent by the fact that the new buildings have to be erected on the site of the old hospital, which is somewhat restricted in area, but notwithstanding that it is evident from a perusal of the plans now issued that the isolation for the different sets of wards has been most satisfactorily accomplished, and the fullest hygienic advantages as regards light and air have been attained.

All accident cases and patients seeking admission to the infirmary will enter by the central gatehouse in Castle-street. On the left is placed the porters' room where applicants will be met by one of the porters. Thence the patients are conducted to a central hall with examination and dressing rooms for males and females on each side. At the end of the central hall are placed an operation theatre for female casualties with a recovery room adjoining, and on the right hand an operation theatre for males, while between the two theatres are rooms for sterilisers and dressings. There is an x ray examination room close at hand. In the basement are bathrooms for bathing the patients. To explain the working of these arrangements, it may be pointed out that the patient, when found to be a case for admission, is taken on a lift to the floor below, and if not too ill is bathed and has his clothes stored in the basement. From here, wrapped in a dressing-gown and blankets, he is taken in an ambulance by a well-heated underground passage to one of the wards. On the right side of the gatehouse block special arrangement is made for noisy and emergency cases. A ward of four beds and two single wards are provided for males and a similar number for females. These wards have double doors and double windows, so that no noise can be heard in the hospital or street.

Coming to the hospital proper, which is situated behind and at some distance from the gatehouse, the whole arrangement of the basement is planned in such a way as to provide in the simplest and readiest manner for the efficient administration of the various departments and the easy working of the entire hospital. Here is accommodation for stores and linen room staff. Also the porters' and wardmaids' dining-rooms, with ample accommodation for the dispensing department, including a fireproof store for inflammables. Above the basement the building rises for six storeys and is, roughly speaking, divided into three great blocks completely cut off from one another by cross ventilating passages. In addition, the separate ward units are cut off from one another by similar passages.

To take a general view, the left block rising stage above stage to the sixth floor is devoted to surgical wards with a theatre attached on each floor. Without seeing the plans it is difficult to imagine how admirably the separate wards and theatres have been isolated from the other buildings and from one another, being connected only by communicating freely ventilated corridors and thereby insuring the maximum of light and air. The medical wards comprised in the block on the right hand are arranged in much the same manner, with the exception that on the ground floor the space is mainly occupied by the electrical department. The central block is situated between the two blocks already described

and connected with them by cut-off passages. On the ground floor of this block is ample accommodation for the business premises of the superintendent and matron, also there are dining-rooms for residents and nurses, while behind is the chapel. On the floors above are situated the gynæcological wards, the burn wards, throat and ear wards, each with an operating theatre; and above are the skin wards, and on the top of this block the plan shows a well-lighted and well-ventilated kitchen communicating by means of service lifts directly with each ward unit and also with the various dining-rooms.

After studying the plans one cannot but feel that experience and skill have overcome many of the disadvantages which seemed at first sight insuperable of building so large a hospital on a restricted site, and when the hospital is completed it should be one of the finest in the kingdom.

CHOLERA AND PLAGUE IN RUSSIA AND THE NEAR EAST.

(FROM THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

SINCE the date of my last letter on this subject (which appeared in THE LANCET of Nov. 28th, 1908, p. 1634) the cholera epidemic has almost disappeared from the south of Russia, but in St. Petersburg there has been a marked recrudescence of the outbreak. The following figures for the whole of Russia are in continuation of those published in the letter just referred to :—

		Cases.	Deaths.
From Oct. 5th (18th)	to Oct. 12th (25th)	1048	552
,, ,, 13th (26th)	,, ,, 19th (Nov. 1st)... ...	732	401
,, ,, 20th (Nov. 2nd)	,, ,, 26th (,, 8th)... ...	500	250
,, ,, 26th (,, 8th)	,, Nov. 1st (14th)	419	189
,, Nov. 2nd (15th)	,, ,, 8th (21st)	324	158
,, ,, 8th (21st)	,, ,, 15th (28th)	217	90
,, ,, 14th (27th)	,, ,, 22nd (Dec. 5th) ...	223	84

It will be observed that, as on former occasions, the returns are not always given for periods of exactly a week's duration, and in one instance the dates of two successive returns overlap. The general diminution in the numbers of cases and deaths is fairly well marked. It would have been much more striking but for the lingering of the disease in St. Petersburg and its recent increase in activity there after a temporary subsidence. This is shown by the following figures (which are, unfortunately, incomplete) :—

		Cases.	Deaths.
From Sept. 28th (Oct. 11th)	to Oct. 4th (17th)	418	193
,, Oct. 5th (,, 18th)	,, ,, 12th (25th)	257	111
,, ,, 12th (,, 25th)	,, ,, 19th (Nov. 1st)	?	?
,, ,, 19th (Nov. 1st)	,, ,, 26th (,, 8th)	?	?
,, ,, 26th (,, 8th)	,, Nov. 1st (,, 14th)	105	34
,, Nov. 2nd (,, 15th)	,, ,, 8th (,, 21st)	70	26
,, ,, 8th (,, 21st)	,, ,, 15th (,, 28th)	112	32
,, ,, 14th (,, 27th)	,, ,, 22nd (Dec. 5th)	154	45

In the latest bulletin for the whole of Russia mention is made of the presence of the disease in the following portions of the country only: the governments of Saratof, Samara, Tver, Tambof, Kief, Poltava, Ekaterinoslav, Kherson, Elisavetpol and Tomsk, the Territories of the Don Cossacks, the Kuban and Terek, and the towns of Odessa and St. Petersburg.

The movement of pilgrim-ships from the Russian shores of the Black Sea has now come to an end for this year's Haj. The majority of them came from Odessa, where the pilgrims, as stated in a former letter, were subjected to a series of measures before their departure. But a considerable number also came from Batoum and other ports, and as their pilgrims had not undergone any special measures before leaving Russia they were quarantined in the Sinope lazaret. It may now be hoped that cholera will not this year be imported to the Hedjaz, as it was last year, by pilgrims from the North. There is already a certain threat of its being imported from the South (or rather from the East). In the last week of November three cases of cholera were landed in the Camaran lazaret from a British steamer carrying pilgrims from India. All three cases occurred among the crew a day or two after the pilgrims had been landed in the lazaret to undergo their ordinary quarantine. The ship was thoroughly disinfected, the pilgrims were subjected to 12 days' quarantine and the disinfection of their clothes and effects, and another ship belonging to the same company was sent from Bombay to Camaran to take the pilgrims on to Jeddah. They have already arrived there and completed a final three days' quarantine and disinfection in the lazaret of Abu-Saad, and as no case of cholera has appeared among them at any time there is good reason to hope that they will not be the means of infecting the Haj. It may be recalled that in last year's pilgrimage cholera was imported to Camaran on two British steamers from India; in each case (as in the present instance) three cases of the disease occurred, but the present instance differs from the others in that the cases were confined to members of the crew. It is also to be noted that the rather severe cholera epidemic in last year's Haj was not in any way traceable to the two infected ships just spoken of; it was almost certainly due to an importation of infection from the north by means of pilgrims traversing infected territory in Russia.[1]

As stated in my last letter, cholera appeared in Persia some time before the end of October. The extent of the outbreak has never been fully known, and, owing no doubt to the reign of disorder in and around Tabriz, the information so far received on this matter has been most contradictory. Thus, on Oct. 24th the Turkish delegate on the Tehran Board of Health telegraphed that cholera had appeared in Tabriz. About the same time the Turkish Consul at Tabriz telegraphed that 11 cases of the disease and 4 deaths had occurred there. A little later the Russian journals announced that cholera was epidemic between Tabriz and Maku (near the Caucasian frontier). On Nov. 9th the Turkish consul at Khoi wired that on the 4th of the month an Armenian woman and on the 5th two Mussulman men had died there with symptoms of cholera. Further confirmation of the existence of the disease, without details, came from the Turkish delegate on the Tehran Board, the Turkish consul at Tabriz, and the Turkish ambassador at Tehran. The last named on Nov. 22nd telegraphed that the Tehran Board had officially recognised the presence of the disease in Tabriz, but the telegraph wires being cut it was impossible to obtain news from Khoi. On Nov. 27th the Ottoman delegate in Tehran quoted the American consul and the Customs authorities at Tabriz to the effect that cholera had been present there during during two months, that it was diminishing, that there had been about 1000 cases and 500 deaths, and that no measures of precaution had been taken. Later it was learnt from the consul at Khoi that five cases with two deaths had occurred there between Nov. 1st (14th) and 14th (27th). Subsequent telegrams indicate that the outbreak was subsiding in and around Tabriz, and finally, on Dec. 19th, the Ottoman delegate at Tehran telegraphed that the epidemic at Tabriz could be considered as extinct. From the foregoing it is clear that later and more exact information must be awaited before any definite idea can be formed of the extent of the recent outbreak of cholera on Persian territory.

There has recently been a revival of the outbreak of plague in Bagdad. It will be recalled[2] that the disease appeared there in May; that down to the end of August it had been the cause of 111 known cases and 67 deaths, and that at that date the outbreak appeared to be approaching extinction. On Sept. 12th there was one death—of one of the cases already reported. Then for a couple of months no fresh cases were reported. But on Nov. 6th a case was seen (confirmed bacteriologically), and since then the returns have been as follows :—

		Cases.	Deaths.
Between Nov. 6th	and Nov. 10th	4	1
,, ,, 10th	,, ,, 21st	4	2
,, ,, 22nd	,, ,, 28th	4	1
,, ,, 29th	,, Dec. 4th	2	0
,, Dec. 5th	,, ,, 13th	4	0
,, ,, 14th	,, ,, 20th	2	2
,, ,, 20th	,, ,, 24th	3	1
,, ,, 25th	,, ,, 27th	0	0

The total number of cases since the beginning of the outbreak in May is stated to have been 132 and that of deaths 76.

A death from suspected plague was reported from Jeddah

[1] See THE LANCET, Jan. 4th, 1908, p. 54.
[2] See THE LANCET, Oct. 3rd, 1908, p. 1040.

on Dec. 16th. The patient, a child, was already dead; it had been ill for four days with apparently all the classical symptoms of bubonic plague, but owing to strong opposition on the part of the parents it was impossible to make a bacteriological investigation of the case. If it was truly a case of plague it must be assumed that the infection of the disease has lingered on in Jeddah since the epidemic there last winter. That epidemic was believed to have died out at the end of March.[3]

Constantinople, Dec. 31st, 1908.

SANITATION IN INDIA.

THE PREVALENCE OF ENTERIC FEVER AMONGST BRITISH TROOPS IN INDIA.

(FROM A SPECIAL CORRESPONDENT.)

III.[1]—*Prevalence amongst Natives of India.*

As far back as 1882 Surgeon-Colonel Welsh, A.M.S., noted the existence of enteric fever among the natives of India, and since that date evidence has been steadily accumulating which proves that this disease not only does occur among Indians but that it is identical in every respect with enteric fever as we know it elsewhere. At the same time, taking into consideration the observations of modern bacteriologists, it appears extremely likely that many of the continued fevers found among natives, which run a mild and often ambulant course, can be accounted for as infections by bacilli of the paratyphoid or paracolon groups, the virus of which is apparently attenuated. The too prevalent belief in past years that the native of India was not susceptible to enteric fever left him to be ignored as probably one of the most important sources of infection, and we can only hope by considering this as well as other channels to hold the disease in check. Among Indian troops and among jail prisoners in India a few cases are reported annually; a few are also reported among the native population. Native troops and jail prisoners are classes of men living under good sanitary conditions. The jail prisoner lives under compulsory sanitary conditions, while at the same time he is cut off from most outside sources of disease. No doubt the native of India is much more immune to enteric fever than the European, in the same way as the Italians, Greeks, and others, who were the principal Europeans employed on the Assouan dam on the Nile in its construction, were more immune than the British troops who occupied its site as a camp previously.[2]

The two largest bodies of natives for whom exact statistics of sickness and mortality are available are the native army and the prison population of India. These records prove beyond question that whilst neither native soldiers nor prisoners are absolutely exempt from enteric fever, their apparent immunity, as compared with that of Europeans, from this disease is very remarkable. During the year 1903, whilst out of a strength of 69,613 European soldiers 1366 admissions and 291 deaths were attributed to enteric fever, there were only 80 admissions and 27 deaths from this cause amongst 124,660 native soldiers, and 45 admissions with 25 deaths among 101,717 prisoners. Amongst the free civil population statistics are furnished by certain qualified medical practitioners in the North-Western Provinces; 19 deaths were ascribed to enteric fever, and it does not appear that any of these deaths from enteric fever occurred among the 4794 children under 16 years of age whose deaths are included amongst those verified. This latter remark is of great importance when contrasted with the theory that native soldiers and prisoners are so rarely attacked by enteric fever because they may have suffered from the disease in infancy and thus have become immune from further attack. In short, the statistics of enteric fever among the two races, European and native, would seem to support the opinion sometimes expressed that enteric fever, instead of being communicated by natives to Europeans, is, on the contrary, being diffused by the latter amongst the former. It is certain that Europeans frequently contract the disease outside India and develop it after landing in India. Natives apparently being saturated in enteric fever from childbirth may become immune in later life. The germs are always in their surroundings and become thus attenuated for them and virulent for Europeans. At times their virulence for natives is apparently increased. Exact information is wanting with regard to the nature of the fever which occurs amongst the ordinary native population and which can give rise to such death-rates as occurred at Nasirabad in 1900, when a death-rate occurred of 44·60 per 1000 from some form of continued fever, and 21·47 per 1000 from bowel complaints, and a total death-rate from all causes as high as 104·06 per 1000. Other instances of high death-rates from undefined fevers may be observed among the civil population statistics. Trustworthy information is, however, difficult to obtain as the majority of such cases never come up for skilled treatment. Annually, undoubted cases of enteric fever amongst natives are observed, but unfortunately the records of these are most meagre. Cases are recorded amongst native followers at Khyra Gali, Mhow, and Kirkee, which came under the observation of army medical officers. Ten cases are recorded amongst the native civil population in Bombay and Poona, six of these being Brahmins. In each of these cases the blood reacted positively to Widal's sedimentation test. Again, the prevalence of enteric fever amongst the native population in the bazaars at Pachimarhi and also at Quetta is reported as a contributory cause to the troops in the garrison of these places becoming infected. Lamb has reported eight cases, and Leonard Rogers, professor of pathology at Calcutta, holds that no race or creed is immune and that over 80 per cent. of the cases of continued fever lasting as long as three weeks prove to be enteric on using the serum test.

Although the problem as to whether enteric fever is or is not a common disease among natives in India is as yet scientifically *sub judice*, it is evident that medical officers now hold a general opinion that enteric fever exists among natives, especially children, to a degree which is not suspected; could medical science be applied to each native suffering from "*bukhar*" (fever) in their villages as systematically and with the same certainty as is done in the wards of a military hospital we should get a greater differentiation of the types than we do. At Sialkot a medical officer differentiated enteric fever in a native corps, which in other circumstances would have been returned as an ordinary malarial attack. Again from Pachimarhi a native child was found in the bazaar suffering from enteric fever and the hospital assistant reported three other cases, and doubtless many others occurred and were returned as "fever." Again, from Kirkee it is reported "natives play a large part in contaminating the ground around barracks and private bungalows as there is no doubt they suffer from enteric fever as much as Europeans, but up to date it is always looked upon as only being remittent fever when they get it." In support of this it is noted that three cases which were treated for enteric fever in the native section hospital at Kirkee gave a positive reaction with Widal's test, and in the fourth case a native driver who died a few hours after admission post mortem showed that death was due to hæmorrhage from one of 12 typical enteric ulcers. At Fatehgarh attention was directed to the prevalence of the disease amongst the native population, and as there were no cases of enteric fever amongst the troops in the previous year, and as far as could be learned no convalescents arrived in the station before the outbreaks, it was thought the presence of infection in the station was originally derived from native sources. No less than five cases occurred amongst Indians, four being confirmed by Widal's reaction. If five cases were seen the inference may fairly be drawn that very many more were not seen as comparatively few cases of "*bukhar*" out of all that do occur in a district come under the notice of medical officers. Having regard to the habits of the native as to his evacuations the infection would be spread broadcast, so it is easy to understand the British soldier contracting the disease notwithstanding all the care devoted to the sanitation of the lines and their vicinity. At Fatehgarh cases were spread over many months and were as follows:—1. A police sepoy; this case was under the civil surgeon and its diagnosis was confirmed by Widal's reaction. 2. The daughter of a hospital servant living in the hospital attendants' lines; clinically a typical case but no bacteriological examination was made. 3. A boy in the regimental bazaar; this case was confirmed by Widal's reaction, as were the next two. 4. A Sais of a school.

[3] Ibid.

[1] Nos. I. and II. were published in THE LANCET of Jan. 2nd (p. 62) and 9th, 1909 (p. 134), respectively.

[2] Vide a letter on Enteric Fever in the Army in the *Times* in January, 1906, by Surgeon-General Sir Thomas Gallwey, M.D. R.U.I., K.C.M.G., C.B.

5. A police sepoy. The last four cases the senior medical officer saw himself, and he notes that clinically they presented all the symptoms of enteric fever; in three he had the blood reaction examined to confirm his diagnosis as he had not met cases in natives before; all were very mild uncomplicated cases except the third which developed thrombosis in the femoral vein.

As there is increasing evidence that fever of the enteric type is more prevalent than commonly supposed among the native population a record of such is urgently desirable. Cantonments become infected by enteric bacilli from without as well as from within, being fouled by the hordes of low-class Indians who live on the soldier and who are in constant contact with him. The only time they are absent from his environment is when they return to their hovels in the bazaar and on returning convey foci of disease from these hovels directly to the barracks. It may now be taken as an absolutely proven fact that Indians, especially when young, suffer from enteric fever and it is also known that this disease in the native is not so severe as it occurs in the European. Infection, however, remains the same. The European arrives in India free from enteric fever and it may not be until his curiosity leads him into all kinds of nooks in the bazaar that he gets infected in this way. Nearer home, any fireboy or cook can bring infection from his home in the bazaar to his food and to his drink. No improvement of any moment or permanence will take place until the soldier becomes more independent of the native; until the regimental bazaars are absolutely razed to the ground; until syce, mundies, &c., are planned on a better scale; and until the men (natives) doing duty with troops leave their families at their own homes and are only allowed leave to see them occasionally.

Natives suffering from enteric fever are often highly infectious, both before and after an attack. This is particularly the case with mild and ambulant cases. Latrines and trenches are readily infected and it is perhaps a question whether the burial of their excreta on the shallow trench system is quite secure. The hospital is the only place where the excreta are destroyed. In regimental bazaars and in compounds of officers and others in cantonments there is always a tendency to overcrowding, and fever once among these natives would be much less were their quarters less crowded, more sanitary, and more frequently inspected. Native landlords have a great objection to sanitary advances and it is only with difficulty and pressure that they can be induced to spend any money on their possessions, and servants' quarters are universally neglected by them. Owners and tenants also might be more active and less apathetic than they usually are. Military cantonments should be for troops only and accommodation for the necessary followers and no others. Ambulant cases of enteric fever among natives constitute a further and probably more frequent method in which the soil of India is contaminated. The native will not lie up in hospital or in his own home when sick longer than he can help; he gets up as soon as he is able and contaminates the ground by excreta. Experiments have been tried in several stations whereby native cooks have been replaced by soldier cooks in barracks and there has been a diminution of enteric fever in the regiments concerned, notwithstanding the fact that other regiments which employed native cooks in the same station have had enteric fever amongst them. Had not this article already become inordinately long some reference would have been made to the greater prevalance of enteric fever amongst Gurkhas than amongst other native soldiers. This greater susceptibility of the Gurkha, whose food and habits bear closer similarity to those of the British soldier than those of other native soldiers, is suggestive of the influence which diet may exercise on the liability to enteric fever.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE Lent term of the winter session commenced on Monday last and all departments of the University are again hard at work with renewed energy after the holidays. In all probability this is the last winter term in which chemistry and physics will be taught at Edmund-street, for it is intended that the chemical and physical departments shall enter into possession of their new premises at Bournbrook during next summer. The transference of the two departments to Bournbrook will necessitate some rearrangement of the early part of the medical curriculum, for the hours devoted to anatomy, chemistry, and physics during the first winter session are at present intermingled in a manner which cannot possibly be continued after the removal of chemistry and physics to Bournbrook. No intimation is as yet forthcoming with regard to the plan which will ultimately be adopted, but it is understood that the matter is receiving careful consideration and no doubt an arrangement will be arrived at by which any loss of time will be avoided. It is essential that the new arrangement shall not cause loss of time, for the number of hours devoted to the preliminary part of the medical curriculum, including anatomy and physiology, cannot possibly be curtailed without detriment to the students.

The Infants' Health Society.

The Birmingham Infants' Health Society was founded about a year ago with the object of giving instruction and advice to mothers living in crowded districts as to the methods which should be adopted in rearing their children. Hitherto the society has confined its work to St. Bartholomew's ward, and it has registered 450 mothers who can obtain free consultations and advice at meetings which are held on every Wednesday evening. At these meetings mothers bring their babies to be weighed and they receive instruction not only in the details of baby rearing but also in sewing, nursing, and cooking. It was feared when the society was formed that there might be some objection to the regular weighing of the babies, but instead a healthy competition has sprung up between the mothers who have registered themselves and they display the greatest anxiety to have their babies weighed and to note the progress made during each week. The society celebrated its first anniversary on Jan. 4th at the River-street Mission Hall. 400 mothers were present and the great event of the evening was the parade of the babies, whose healthy appearance fully justified the formation of the society. It is hoped that the success so far gained will lead to the formation of societies in other districts where the need is great.

The Feeble-minded.

In association with the presentation of a report of the Lunatic Asylums Committee of Visitors to a recent meeting of the city council it was pointed out that whilst no very clear line of demarcation could possibly be made between the feeble-minded and the insane yet it might be said, speaking generally, that the number of persons in Birmingham who might be classified as mentally defective was from 700 to 1000. The cases of these people have received very careful consideration by the recent Royal Commission and the council passed a resolution expressing general approval of the recommendations of the Royal Commission and urging the Government to promote legislation for carrying the same into effect as soon as possible. It was recognised that when such legislation was passed the Asylums Committee would cease to exist and would be replaced by a new committee having much larger powers. There was some difference of opinion as to the amount of expenditure which would be necessary under the new arrangement. Mr. Davis, who proposed the motion, apparently thought that the local expenditure would be increased, but the Lord Mayor expressed the opinion that the ultimate cost would not be greater than at the present time, for although the primary expenditure might be greater ultimately, if the mentally defective were kept under perpetual control, expense would be saved. In any case, whether the cost be greater or not, the council has adopted the right policy and the city must be prepared to do what is necessary in the hope that advantage will eventually be gained.

Scarlet Fever at Erdington.

At the last monthly meeting of the Erdington district council the recent outbreak of scarlet fever in the district and the steps taken to deal with it were fully discussed. In the five weeks preceding Jan. 6th last 25 scarlet fever cases were notified, an average of five per week. During the preceding four weeks, however, the number of cases averaged 14 per week. When the outbreak was at its worst the schools were not closed in spite of great popular clamour, and Dr. A. Bostock Hill, who defended his action with regard

to the non-closing, stated that "in the light of modern experience and the latest development of sanitary knowledge" closing of the schools would have been improper from a sanitary point of view. As a matter of fact, the schools were closed on Dec. 18th, a little earlier than would have been the case in ordinary circumstances, and whilst Dr. Bostock Hill did not impugn the wisdom of the step from an educational point of view he stated that it could not have been necessary from a public health point of view. Several members of the council expressed great dissatisfaction at the closing of the schools before the usual time, and it appeared that neither the health officer nor the managers were responsible for the closure.

Jan. 12th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Manchester Port and Food Inspection.

THE Manchester port sanitary authorities have been subjected to some criticism by a member of the Liverpool city council, who is reported to have said that "it is common knowledge in the corn and other trades that food inspection is being overdone at Manchester docks, to the detriment of that port." It is very good of the critic to care so much for the prosperity of "that port," but what of the people who benefit by the superior condition of the food distributed from the Manchester docks. Would it be equally well with them if the food inspection were perfunctory, superficial, and careless? Two years ago the Pure Food Act passed through Parliament, and this Act gave to the Local Government Board power to make regulations which might be adopted by any port authority for the inspection of foodstuffs. Both Manchester and London made use of this opportunity of insuring that the food coming into those cities should be good food. It was said at the time with regard to Manchester that it would place the port at a disadvantage as compared with those where the Act was not adopted. Manchester, however, has seen no reason to regret the course she took, and Mr. W. F. Dearden was appointed medical officer to the port sanitary authority for the purposes of the Act, with a staff of inspectors under him. The primary complaint of the critics seems to be with regard to the corn imports, a proportion of which is damaged and unfit for human food. This is not to be wondered at considering the vast quantity of corn imported. Until two years ago it appears that the damaged corn brought to Manchester was taken to Liverpool and sold there and used, so it is said, for making inferior whisky and for mixing in small quantities with good grain for bread-making. No one, except perhaps the dealers in damaged foodstuffs, will consider such a use desirable. We do not want our bread made in part of good corn and in part of that which is unfit for human food. Nor would the whisky devotee think the better of his liquor if he knew that it was made in part of damaged corn. How much damaged it would have to be before it was judged unfit even to make bad whisky is a secret of the trade. Under the rules grain is inspected when it comes into the port. Should any be unsound it is either voluntarily surrendered or the magistrates, on application by the authority, give control of it to the authority. It is then sold to persons who can give conclusive assurance that it will not be used for human food. Its destination may be to be used as poultry food, cattle food, or be made into size or something else; or possibly it may be destroyed. But this does not very often happen. During the first year out of the hundreds of thousands of tons imported only 101 tons were seized and only 10 tons destroyed. Last year 600 tons were seized and only about four tons destroyed. It really comes to this, that foods coming into the port must be inspected or they must not. If the inspection is honest, damaged foodstuffs will not be foisted on the public as being good and wholesome. Manchester merchants do not complain; they consider that by inspection they obtain an absolute guarantee that the food which they import is pure, and they coöperate willingly with the inspectors. If, however, the owners object to the seizure of the goods the authority must obtain the consent of the magistrates who before giving it require absolute proof of the condition of the grain or other foodstuff. It is said that such an application has never been refused, a fact telling strongly in favour of the accuracy of the inspectors. Condensed milk sometimes gives trouble but not so often as might be expected, and the critics object apparently even to bulged and blown up tins being stopped, as one parcel was. Mr. Dearden says that "a great quantity of pure, condensed, unsweetened, sterilised milk" is imported, but there is also "machine-skimmed milk, sweetened with sugar, and unsterilised," and the condensed milk was of this character. It appears that of about £230,000 worth imported during the last two years the total amount seized was worth about £6. The chief trouble however, seems to be with the "grain people." Mr. Dearden says there is no trouble with the "fruit people," as they have come to be classified, who welcome the inspection and are anxious that no unsound fruit shall be sent out. There are, if an importer is dissatisfied, plenty of checks against abuse. He can appeal from the inspector to the medical officer; if not satisfied with the medical officer and the bacteriological and chemical evidence he can oppose the application to the magistrates, and if not content with the magistrates' decision he can sue the authority for damages. No one so far has done anything of the kind. This district may be very thankful for this inspection, and if the traders in damaged food look for sympathy they will not find much in Manchester.

The Coroner's Work.

At the conclusion of the Manchester coroner's court on Jan. 2nd the jury and the officials wished Dr. E. A. Gibson good health and a prosperous year. In thanking them he said his best wish would be that there might be fewer inquests. That would be so if parents looked after their children better and saw that they did not get smothered or burnt and if elderly people would learn in their own interests not to drink to excess. "These were the causes that made most of the work in that court."

Jan. 12th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool School of Tropical Medicine: Return of the Blackwater Fever Expedition.

THE members of the Blackwater Fever Expedition of the Liverpool School of Tropical Medicine have now returned to England. The expedition consisted of Dr. J. O. W. Barratt and Dr. Warrington Yorke. They left England on August 12th, 1907, and returned on Jan. 5th, remaining in Nyassaland for 14 months. Nyassaland is a mountainous country, with the luxurious vegetation usual in the tropics, and is well suited for white men except for the circumstance that the country is in some parts unhealthy, especially in the neighbourhood of the Shire river which will continue to form an important line of communication until the railway has been carried to the coast. The general death-rate among the white population is about 50 per 1000 per annum, the most serious sources of illness being malaria and blackwater fever, which are responsible for a large proportion of the deaths that occur. It is therefore necessary in order that the pioneers of civilisation in this and other countries similarly affected may survive to combat in particular these two diseases. In the case of malaria the means of doing this has been the subject of considerable investigation, and, thanks largely to the researches of Professor Ronald Ross, it has now become possible by carefully directed measures to stamp out malaria. Much less attention has, however, been directed to the investigation of blackwater fever, which, nevertheless, is of sufficiently frequent occurrence to affect the economic development of the countries in which it is prevalent. In Nyassaland, for example, it has caused a relatively heavy mortality among planters, missionaries, and those engaged in transport and railway construction. So serious is this that the problem of combating its ravages has become a matter to which the Liverpool School of Tropical Medicine has so long given its earnest attention, culminating in the despatch of the expedition to Nyassaland which has recently returned. The report of the expedition will not be ready until March, but it may be of interest to give a few particulars concerning the conditions under which the work has been carried on. The expedition was provided with an extensive equipment for pathological and chemical

research and unusual opportunities for studying blackwater fever presented themselves. Nearly all the cases occurring during their stay in the Protectorate came under the observation of the members of the expedition. Every assistance was afforded by the Government medical staff and by the Shire Highlands Railway Company. The latter granted special facilities for the use of the line to the members of the expedition—a matter of great importance, since the majority of attacks of blackwater fever occurred in the vicinity of the railway. Two hospitals were available for the reception of cases of blackwater fever—the railway hospital at Luchenza and the Government hospital at Blantyre, the latter being exceedingly well equipped. Travelling usually had to take place during the daytime while the sun's heat was very oppressive. Blackwater fever is usually most prevalent during the rainy season, when the means of communication are more or less interrupted and movement from place to place is difficult, so that the members of the expedition sometimes had the unusual experience of travelling in a torrential downpour, but even that was found preferable to the intense heat of the midday sun by the river. The expedition was from time to time in touch with the expedition sent out nearly two years ago by the same school for the study of sleeping sickness in North-East Rhodesia and the south of Lake Tanganyika. The blackwater fever expedition did not meet with any case of sleeping sickness, though some anxiety was felt in Nyassaland lest sleeping sickness should extend into that country. One of the members of the expedition was attacked with dysentery, but otherwise the health of its members remained good. It is interesting to note that the expedition was financed by the Colonial Office and by the Liverpool School of Tropical Medicine in equal shares. At the present moment the same school has a sleeping sickness expedition in Central Africa, a yellow fever expedition in Brazil, and a malaria expedition in Jamaica.

Toxteth Guardians and Cases of Pulmonary Tuberculosis.

At the weekly meeting of the Toxteth guardians the master reported that in compliance with an Order of the Local Government Board he had prepared a return of the cases of pulmonary tuberculosis admitted into the workhouse infirmary during the past ten years. This showed that within that period 724 cases had been admitted, 297 had been discharged, and 237 deaths had occurred.

Liverpool Hospital Sunday.

Sunday last, being Hospital Sunday, opened very favourably so far as the weather was concerned, and morning collections were quite up to the average. Unfortunately the cause suffered through a wet evening. So far as the returns from the various churches and chapels have come to hand it is expected that last year's total will be maintained. The latter's total realised £6664, whilst the Hospital Saturday Fund added over £9000 to the joint funds.

Providence Hospital, St. Helens: Extension Scheme.

Lord Gerard has intimated his intention to give a sum of 500 guineas towards the extension fund of the St. Helens Providence Hospital, of which he is president. The fund is intended to provide a new operating theatre, a children's hospital, a new men's ward, a new corridor, and other offices. £10,000 is the amount required for those objects.

Jan. 12th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Cheltenham Town Council and the Medical Officer of Health.

AT a meeting of the Cheltenham town council held on Jan. 5th a considerable discussion arose when the report of the education committee was presented in reference to the appointment of a school medical officer. The report stated that the education committee had appointed the medical officer of health to the post at a salary of £50 per annum. The town council was not consulted in the matter and several members of that body strongly opposed the appointment on the ground that as the borough medical officer of health gave his "whole time" to the work he could not undertake other duties. The town clerk ruled that if the minutes were passed it would indicate that the council acquiesced in the appointment. Eventually an amendment was moved to send the matter back to the education committee and this was carried by 11 votes to 10.

The Health of Gloucester.

The medical officer of health of Gloucester, in his annual report for 1908, states that the birth-rate was 23·9 per 1000. The death-rate was 13·4 per 1000; the death-rate for residents of the city was 12·6, which is the lowest since 1903. The infantile mortality rate was 113·1 per 1000 births.

The Eyesight of School Children in Somerset.

At a meeting of the Somerset county council held on Jan. 5th Mr. J. Huxtable Bendle, M.B. Lond., was appointed assistant medical inspector of schools at a salary of £300 per annum, rising annually by £25 until £350 is reached. The education committee, which selected Dr. Bendle, states in its report which was presented at the meeting that as Dr. Bendle had had special experience in ophthalmic work he will act as ophthalmic adviser for the schools and such time as will not be required for this work will be occupied in ordinary medical inspections at the schools.

Fees under the Midwives Act at Bridgwater.

At a meeting of the Bridgwater board of guardians held on Jan. 6th a letter was read from the district medical officers stating that they were unable to accept the terms offered by the guardians—viz., 10*s.* for each midwifery case when called in by a midwife. After some discussion it was eventually decided to invite the medical officers to attend a meeting of the board.

Anthrax and Milk-supplies.

Towards the end of November last a cow died from anthrax on a dairy farm in Llanelly where there were 17 other milking cows. The farmer, not knowing the nature of the disease from which the animal was suffering, had bled it, with the result that within a week another cow standing in the same stall became infected and died. The veterinary surgeon who reported to the urban district council the circumstances of the outbreak stated that it was not likely that the milk could be affected because when a cow suffered from anthrax the flow of milk ceased. The medical officer of health (Dr. S. J. Roderick) very prudently, however, advised a suspension of the sale of milk from the farm for 14 days. Early in January a third cow was attacked and died and at the last meeting of the district council Dr. Roderick stated that the bacillus anthracis had been detected in the milk. He pointed out that an epidemic of anthrax might be produced in the town if the milk were dealt with or consumed by persons having chapped hands or lips or abrasions of the intestines. The supply of milk from the farm has therefore been stopped for a further period.

Merthyr Hospital.

When the Merthyr Hospital was erected in 1887 there was accommodation in its wards for 30 patients and during the past ten years the number of beds has been nearly doubled. The late Marquis of Bute, the present Marquis, and Sir William T. Lewis contributed very generously to the cost of the original buildings and to the extensions, but the cost of maintaining the institution is borne very largely by the workpeople of the district who contribute fixed sums weekly through organised channels. The management of the hospital has been criticised from time to time by the workmen who have desired among other things that every practitioner in the town should be entitled to attend his own patients when they were admitted into the hospital. For many years the rules of the institution provided that an annual subscriber of a guinea or upwards should be a governor of the hospital and that any body of subscribers, such as workmen, should be entitled to nominate one governor for every 5 guineas subscribed annually. At a recent meeting of the governors this basis of representation has been altered. Every annual personal subscriber of 1 guinea still remains a governor, but a body of workmen will now have to subscribe at least £50 annually—that is to say, the sum necessary to maintain one bed—when they will be entitled to nominate five governors. If the annual subscription is sufficient to support two or more beds three additional governors may be nominated. The qualification for a life governor has also been raised from the sum of £20

to £50. The new rules should increase the administrative efficiency of the hospital, which has a record of good work accomplished.

Jan. 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary.

THE annual general meeting of the supporters of the Edinburgh Royal Infirmary was held on Jan. 4th, Lord Skerrington occupying the chair. The number of patients treated in the wards had been 10,975, which is about 500 above the number treated in any previous year. The leading aim of the chairman's remarks was to show that Edinburgh and Leith were not supporting the infirmary in proportion to the number of patients entering from these places. Of the total number of patients 6259 came from these places. Lady Susan Gilmour was elected a manager in place of Miss Haldane, who resigns, and Mr. Walter Bell, President of the Trades Council, was also elected. This is the first time a "working-man representative" has had a seat on the board of management and it will be interesting to see whether his special knowledge will be of practical value to the institution.

Scottish Branch of Queen Victoria's Jubilee Institute for Nurses.

The annual report of the Scottish Branch of this very valuable organisation shows what an important and ever-enlarging work the branch is doing. There are now 308 nurses on the Scottish roll, while during the past six years 11 new posts have been annually created. The premises for the special training of nurses in district work have been enlarged. During the past year 32 nurses, whose training was completed during the year, have been permanently engaged by local committees all over Scotland. During the year no fewer than 5026 new cases have been nursed, while the total number of visits paid reach the high figure of 117,452. There is no doubt as to the great value of the work done by these nurses in Edinburgh, and that the medical men of the city fully value it is shown by the fact that of the total number of cases visited 3620 were sent by medical men, 800 by dispensaries, and 360 by hospitals. In many directions the influence of the nurses must be inestimable apart altogether from the immediate value that the visits are to the sick.

Death of Dr. D. Argyll Robertson.

The intimation of the death of Dr. Argyll Robertson in the newspapers of Jan. 5th came as a shock to the medical profession in Edinburgh, most of whom did not know that he had gone for a second visit to India.[1]

Aberdeen Royal Infirmary: Hospital Sunday Collections.

The annual collections on behalf of the Aberdeen Royal Infirmary were taken in the churches of the city on Jan. 3rd. In the Established Church the sum collected amounted to £486, as against £495 last year; in the United Free Church £389, as compared with £298; and in Episcopal churches (two returns), £21. Of Roman Catholic churches the only return made was £25 from St. Mary's Cathedral. In Congregational, Baptist, and other churches the collections amounted to £64. A number of churches have made no returns; several of these do not make their collections at this time, while others have different means of contributing. The largest contribution was made in St. Clement's parish church, the collections amounting to £111. The next highest was in Queen's Cross United Free Church, which amounted to £102. The total sum collected amounted to close on £1000, compared with £916 last year and £1044 in 1907.

Dundee Corporation and Sidlaw Sanatorium.

This sanatorium was founded by the generosity of the late ex-Provost Moncur. In all he gave £25,000. It was opened in 1902 by the Countess of Airlie and is managed by a board of directors. The site which it occupies at the foot of the Sidlaws was given on easy terms by the late Earl of Airlie. It has done much good work both as to in-patients and in distributing to patients in their homes financial assistance from a fund specially provided by benevolent citizens. It has, however, always been found difficult to meet expenses. Several members of the town council of Dundee, therefore, in view of the importance of dealing with consumption in a comprehensive manner, have voiced the proposals that this institution should be taken over by the corporation. The matter is meanwhile in an initial stage, but inquiries are being made, and a visit has been paid on behalf of the public health department to obtain data on which to base future proceedings.

Jan. 9th.

[1] Dr. Argyll Robertson's distinguished career is dealt with at p. 208.—ED. L.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Research Defence Society in Ireland.

THE Research Defence Society will receive the powerful support of the medical profession in Ireland. It has been auspiciously introduced under the patronage of many of our most eminent theological, legal, and (non-medical) scientific fellow-citizens, and we regard it here as a fact of happy omen that the Very Rev. W. Delany, S.J. (who has long been President of University College), and Dr. Anthony Traill (the first medical Provost of Trinity College) are among the most earnest supporters of the society. In Dublin, owing to the want of laboratory endowment, scientific research has been left in the shade—relatively—during the past third of a century or so. This fact has contrasted painfully with the record of its brilliant leadership in the early dawn of physiological advance, when some of the most valuable early work was carried out here. I will refer to but two examples. In 1834 the cause of the second sound of the heart, which had been curiously misinterpreted by the gifted inventor of the stethoscope, was discovered by actual experiment by Mr. Robert Adams and Sir Dominic Corrigan. The results then obtained led to the discovery and description by the former of the "button-hole condition of the mitral valve" and by the latter of the "permanent patency of the aortic orifice" and the pathognomonic pulse which always accompanies this condition. I need not insist on the fact that these clinico-pathological items form the supporting pillars of our entire "modern" system of cardiac diagnosis and therapeutics. In the following decade Dr. Eades (of Dublin), before the appearance of Dr. Fleming's elaborate researches, demonstrated the chief properties of aconite by experiments on cats and applied his results with great success in clinical practice, proving its great value in neuralgic affections, especially those of the face. The Presidents of the two Royal Colleges and the President of the Royal Academy of Medicine have issued a circular to the medical profession inviting recruits for the society.

New Year Entertainment at the Whitworth Hospital, Drumcondra.

One of the most interesting, and certainly one of the most successful, of the professional events of the opening days of the New Year was the entertainment given to the patients of the Whitworth Hospital, Drumcondra. This hospital has not, perhaps, quite secured the repute which the work which has been carried on there merited, but it has always been one of the specially useful, as well as senior (being established in 1818), of our metropolitan medical institutions. On the occasion of the New Year entertainment all the wards of the hospital, as well as the stairs and the handsome entrance-hall, were most tastefully decorated with evergreens, and tea was dispensed to the visitors by the lady superintendent and nurses. In the wards the patients as well as visitors were entertained by accomplished amateurs with music, both vocal and instrumental, recitation, and dancing, and appropriate presents were distributed.

Death of Dr. Charles P. Coppinger.

I regret to announce the death, in his 63rd year, of Dr. Charles P. Coppinger, which took place recently at his residence, 17, Merrion-square, Dublin. Dr. Coppinger was a very brilliant surgeon and enjoyed a most extensive practice, operative and consulting. For many years he acted as surgeon to the Mater Misericordiæ Hospital and his written contributions to surgery included several important works. Dr. Coppinger was a frequent contributor to the columns of THE LANCET.

The Privileges of Medical Men.

At the Clones (County Monaghan) Quarter Sessions on Jan. 11th Dr. Edward Tierney, J.P., of Clones, in an assault case refused on principle, for the sake of the medical profession, to give medical evidence unless he got the usual fee or a promise of it. The county court judge said that if he had been summoned he would have allowed the fee, but "if a medical man is in court he has no privilege any more than any other man." Dr. Tierney, however, pluckily refused and his honour Judge Craig fined him £2 for contempt, and on Dr. Tierney protesting ordered the police to remove him from court. It seems that the plaintiff in the case had been attended by Dr. Tierney. The solicitor for the plaintiff said, on the grounds of poverty, that his client could not pay a medical man his fee in the case. He did not explain how he was able to pay a lawyer. It is hoped that Dr. Tierney will appeal against the decision.

The Proposed New Abattoir at Belfast.

There are still great discussion and dissatisfaction in regard to the proposed site for the new public abattoir in Belfast which was condemned by a series of experts appointed by the city council (the president of the Ulster Medical Society, the medical officer of health of Belfast, and the local medical inspector of the Local Government Board) as well as by the butchers of the city. Notwithstanding all this, the corporation has actually adopted the site condemned by the experts whose opinion was asked, and as a result at a meeting of the city of Belfast Master Butchers' Federation held recently the following proposition was passed unanimously:—

That from information received, and the character of the reply from the Local Government Board, all the interests of the Federation have been ignored, it is now time for the butchers of Belfast to look after their own interests, and we hereby instruct our secretary to advertise for suitable sites for district abattoirs outside the municipal boundary.

It appears that there is no real inspection of foreign meat brought into Belfast and there is no proper prevention of meat killed outside the city area being brought in without inspection. It is said that the butchers would have accepted the situation where the present horse fair is held, but they naturally object to the place so thoroughly condemned by the experts.

Health of Belfast.

The report of the medical officer of health presented on Jan. 1st to the first monthly meeting of the city council of Belfast held this year showed that for the four weeks ending Dec. 19th last the death-rate was 17·7 per 1000, and the zymotic death-rate 0·4, while the rate for chest diseases was 7·2 per 1000. All the infectious diseases showed a decrease except scarlet fever which is rather higher than during the same period in 1907. A summary of the vital statistics in 1908 (as calculated on the number of deaths registered during the 51 weeks ended Dec. 19th, 1908) appended to the report shows that as compared with a similar period in the previous year the total death-rate per 1000 is rather lower (19·3 instead of 21·3), while the zymotic death-rate is 1·3 instead of 1·7, the typhoid death-rate 0·15 instead of 0·22, and the tuberculosis mortality 2·2 instead of 2·5. Curiously, in the same period in 1908, the infantile mortality rate during these 51 weeks was higher—145—than in the same period of 1907, when it was 135, and in 1906, when it was 143 per 1000 births.

The Ulster (Benn) Eye, Ear, and Throat Hospital.

Dr. Henry Hanna has been appointed surgeon to the Ulster (Benn) Eye, Ear, and Throat Hospital in place of the late Dr. Robert Allen.

The Water-supply of Lurgan.

At a meeting of the urban council of Lurgan held on Jan. 4th Dr. Samuel Agnew, medical officer of health, presented a report urging that the council's works should be so modified and amended or increased as to secure the filtering of the water of Lough Neagh being done in the most trustworthy way. He strongly urged the council to increase the capacity of the filtered-water reservoir and to provide means for securing uniformity in the rate of filtration. Recent analyses made by Professor Frankland, as compared with previous ones, showed that there was some increase in the impurity of the Lough Neagh water. It was decided to have a consultation with the engineers who carried out the Lurgan water scheme as to what works were needed to secure a purer water-supply.

Jan. 12th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Observations upon a Parasite affecting Human Beings.

ON Jan. 4th Dr. Roux communicated to the Academy of Sciences a very interesting paper by M. Borrel of the Pasteur Institute. M. Borrel in studying demodex has determined that nearly 50 per cent. of human beings harbour the creature in their faces, noses, or ears. In five out of six patients with cancer of the breast he has found demodex in the nipples but has been unable to prove a causal connexion between the parasite and the cancer. M. Borrel, in his researches on leprosy, has discovered also that Hansen's bacilli attach themselves to the demodex which infests the bodies of lepers. The contagion of leprosy could thus be transmitted readily by means of these parasites. A negative experiment should be made to prove this. All the demodex parasites in leprous families should be destroyed by means of vigorous scrubbing with coarse soft soap or washing with turpentine or petrol. It could then be seen whether such a measure had any result in stopping the spread of the disease.

The Treatment of Diabetes.

At the Therapeutical Society on Dec. 23rd last M. Guelpa recalled the observations of Dujardin-Beaumetz and Stahler to the effect that the progress of the disease increases in rapidity in proportion to the patient's decrease in weight. From this M. Guelpa concludes that the disease is influenced and "nourished" by toxic products which must be eliminated before any cure can be obtained. He has applied these principles to the treatment of diabetes with excellent results. An extensive experience has taught him that simple withholding of food results in suffering to the patient from the unpleasant effects of hunger and of auto-intoxication as well, but that these symptoms disappear invariably if he purges himself thoroughly every day. The following is a summary of M. Guelpa's treatment. For three or four days the diabetic should take daily a whole bottle of some natural aperient water slightly warmed, taking less than an hour to drink it. He should drink as much as he likes of water or thin drinks, preferably warm and containing little or no sugar. He should return by degrees to his normal diet during the next few days and should repeat this course of treatment three or four times, or more if necessary, until the complete and lasting disappearance of all the symptoms of diabetes. As a rule, by the end of the first course the glycosuria and the severe symptoms have cleared up, but the sugar sometimes returns in small quantities when feeding is first resumed and finishes by vanishing completely when the patient is firmly restored to health. It is as well to add that patients tolerate the treatment much more easily than would be supposed and a very long trial of it permits M. Guelpa to declare that its practice can do no possible harm.

The Treatment of Suppurative Cervical Adenitis by Radiotherapy after Aspiration by a Syringe.

At the Lyons National Medical Society on Dec. 7th, 1908, M. Barjou said that until recently he had only treated non-suppurative adenitis by radio-therapy and suppurating glands by incision. The latter procedure doubtless resulted successfully but left most unsightly scars. He showed a patient who had had a large suppurating cervical gland which he emptied by puncturing it with a Pravaz syringe and then treated it by radio-therapy. The patient is now cured and has no scar and M. Barjou has had three similar cases.

The Thyroid Treatment of Obesity.

The thyroid treatment of obesity has been much vaunted in the past but at a recent meeting of the Society of Biology M. Labbé and M. Louis Furet gave an account of the results which they had obtained during careful observation of certain obese patients who were treated in this way. The amount of nourishment taken, together with the urinary and fæcal excretions, were rigorously noted and examined. The two observers came to the conclusion that thyroid treatment, especially with a fresh extract of the gland, weakened the muscular tissue, hindered the combustion of fat, and in consequence delayed the cure in so far as that consists in the

patient getting thinner. It would appear that thyroid treatment ought not to be used in cases of obesity.

Jan. 12th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

"Siculo-Calabria Redivivа."

THE same spirit that did not "despair of the Republic" after the terrible defeat at Cannae directed the counsels and dictated the action of the Parliament of Italy, convened, in urgent session, on Friday last to meet the Siculo-Calabrian "situation." Before a full house and an audience in the "tribunes" in which nearly every civilised power was represented, the President in solemnly impressive words gave voice to the mind and will of the Italian people on the line of conduct to be pursued in retrieving the present and providing for the future of its sorely-visited brethren. From a brief but adequate description of the disaster of Dec. 28th Signor Marcora proceeded to a tribute to the work of salvage and relief—a tribute in which eloquent acknowledgment was made of the sympathy and the succour vouchsafed from abroad, in which, moreover, the prompt and effective aid of the British and the Russian bluejackets was warmly eulogised—and then he gave measured and emphatic expression to what was uppermost in the minds of his audience, the resuscitation, the reconstruction, and the rehabilitation of the ruined cities. Amid the resonant cheers of the deputies—echoed from the tribunes—he said the motto of Reggio, as of Messina, was—

"Post fata resurgo,"

and then he announced the introduction of a Bill conceived in that sense, the provisions of which will be matured by a special commission drawn from leading men of all parties and provinces. Having thus interpreted the ardent wish of the country, Signor Marcora resumed his seat with the consciousness that he had all outlying civilisation in sympathy with him and that whatever the difficulties—neither few nor small—which have to be encountered, he may rely on the moral, not to say the material, support of that civilisation in coping with and in overcoming them.

Messina's University and Medical School.

This ancient seat of learning, dating from 1548 and famed as the *alma mater* of Sicilians distinguished in all the faculties, and not least in that of medicine, will also rise an "Academic Phœnix" from the débris of the earthquake. Meantime the question of rehabilitating its teaching staff, some of whom lost limb or life itself in the cataclysm, is of present interest; while the proposal is already being entertained of transferring to Bari on the Adriatic the work which it has so effectively carried out, pending the reconstructive operations. Such a transference is not without precedent in the university life of Italy. Bologna herself, for example, the "Mater Studiorum" or nursing mother of all European seats of learning, once and again, during the prevalence of plague or epidemic disease, had to find accommodation for her senators, academicians, and students in the neighbouring cities. Messina, according to the latest returns, numbered 50 *professori ufficiali* (regular professors), 50 *professori pareggiati* (non-official, whose concurrent courses were academically recognised), 40 assistant professors, 60 subalterns or *privat-docenten*, and 700 students. The only objection to the proposed transference of its teaching staff and its studentship to Bari is this: that Bari, once possessed of a university of her own, though only *ad interim*, may be inclined to retain it and thus add another to the 20 or more seats of learning now scattered throughout Italy—to the cheapening of professional education, the excessive multiplication of "graduates," and the creation of what the Senator Guido Baccelli has happily designated "an academic proletariat." But this, perhaps, is to anticipate an improbable contingency.

The Work of the Red Cross.

The rescue and the relief of the submerged or injured survivors of the cataclysm will one day inspire a volume, fraught with interest as dramatic as any that fiction can boast of. Meanwhile in illustration of the resources possessed by modern civilisation for meeting and mitigating such calamities brief reference may be made to the "Croce Rossa Italiana." Not an hour was lost in forwarding from its headquarters in Rome to the seat of suffering ten military hospitals, ten ambulances, two hospital trains, and (by telegraph) a hospital ship. Two great territorial hospitals were established and are now in active operation at Naples and Palermo; eight "posti di soccorso" (relief stations) were planted on the railway lines for the injured or the "fugitives" in transit; 200 spacious tents, capable of accommodating 50 persons each, were despatched to the earthquake-visited spots; 200 commodious and fully provided magazines (or stores) have by this time been amply utilised at Naples (for Sicily) and at Palmi (for Calabria). Blankets, in number 8000, sheets 6000, *duvets* 6000, shirts 5000, to say nothing of lint, bandages, medicines, disinfectants, creature-comforts, and victuals in great abundance, were early available. On active duty were 180 officers and 500 "rank and file" of the Italian Red Cross, while 60 lady nurses were in attendance on board the hospital ship, on the hospital trains, or in the territorial hospitals. The "fugitives" were also furnished with clothing, linen, and subsidies in money from the same organisations. All its subcommittees, urban and provincial, forwarded, as soon as collected, other supplies of clothing and money—the Turinese section alone contributing a first subvention of 20,000 lire. Truly a noble example of what humanity can achieve in the abatement of suffering or misery.

Jan. 10th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Sickness and Accident Insurance Bill.

THE Government has introduced a special Bill, entitled "Reform der Socialversicherung," to effect a radical change in the present unsatisfactory state of the provisions for illness amongst the working classes. At present a certain proportion of the population is protected by the law that all labourers, employees in shops and factories, and similar persons of the lower standards of life must belong to a "Krankencassa" (a sick club under control of the trade unions or labour federation) if they have no independent position as employers. About 3,000,000 wage-earners came under the scope of the law. The new Bill, however, will affect more than 6,500,000, as it proposes to extend the benefits of the old "Krankencassa" to all wage-earners with an income of less than 3600 crowns a year (£150). These benefits are free medical assistance, free drugs, and a daily sick pay varying between 2*s.* and 10*s.* according to the income of the patient. If hospital treatment is necessary the "Cassa" will have to pay the expenses, and during the stay in hospital of the patient his relatives who were dependent on his earnings will receive 50 per cent. of his sick pay as allowance. Hitherto the patient has received sick pay only for 20 weeks; the new Bill suggests payment as long as the disease lasts up to one year; if the patient has to keep away from work for a longer period he will be considered an invalid under special provisions. In such circumstances the number of medical men appointed by the "Cassa" will of course have to be increased enormously. Whilst at present the ratio is 1 for about 1000 or 2000 members, in future the ratio will have to come down to at least 1 in 600. The new Bill means a decided loss of such patients as may occur amongst at least 3,000,000 inhabitants for the private practitioners. The profession has already made energetic endeavours to limit the admissibility to the "Cassa" to an income not exceeding 2400 crowns (£100) a year. Indeed, the majority of the lower middle-class does not earn more than from 3000 to 4000 crowns a year, and thus the private practitioner would be bereft of an important source of his income. The Parliamentary discussion on this point will perhaps, as is hoped, modify the Bill to meet medical wishes. The medical officers to the "Cassa" will be under contracts and controlled by the local medical board, and the patient will be entitled to choose his medical adviser from those whom the "Cassa" will appoint. Special courts will settle any disputes arising between the medical officers and the "Cassa." The duty of the "Cassa" to look after incapacitated members will prompt it to send them into a public hospital or to erect hospitals of its own accord, especially in country districts, which will offer a favourable opportunity to the profession. The

following clause of the Bill is also worth mentioning: If a person belonging to a "Cassa," although capable of work, has to abstain from it on account of the danger of disseminating a disease, he shall be entitled to sick pay as long as he is prevented from earning. A very important clause deals with women in confinement. The Bill proposes a payment of 150 per cent. of the sick pay for a period of four weeks to the woman giving birth to a child if she abstains from her work. Under certain industrial regulations already in force in this country six weeks' pay is given by the present "Cassa." But by the proposal of paying a special premium to women who suckle their babies breast-feeding should be promoted. In combination with the "Krankencassa" the law makes accident insurance compulsory for persons engaged in numerous occupations. This will comprise 2,000,000 people, and the aim of the law is to insure for an injured man not only full compensation for any loss of earning capacity but to enable his complete restoration if possible by entailing the care of accident cases on the "Accident Cassa" which will provide adequate medical help, in hospital or otherwise, "so as not to be burdened by the payment of accident sums. Of course, during his illness the victim of an accident is entitled to his full sick-pay, or even to 150 per cent. if necessary." About 10,000,000 persons come under the scope of the "old age and invalid" insurance. This concerns medical men because they will often be called upon to pronounce upon an applicant's condition. A person is considered an invalid if on account of age or disease he cannot earn at least one-third of the ordinary earnings of a person of his age and training. A certain scale of the value of organs will enable the injured or the invalid to obtain an adequate compensation; but it must be confessed that the Bill offers the most advantage to the victim of an accident. The above-mentioned facts afford only a short abstract of the most important provisions of this comprehensive Bill. It is a great economic experiment in the health of the earning classes and one which will meet with the approval of many prudently minded persons. But the hardships entailed by it upon the medical profession are not small and the sacrifices expected from them are important. It is of vital importance that its operation should be limited to the proper persons whom it is intended to assist.

Death of Professor Schnabel.

After occupying for 12 years the post of director of the second ophthalmological clinic, Professor Isidor Schnabel suddenly died in the general hospital, whilst going to his daily lecture, on the very threshold of his clinic. He was only 66 years of age. He was a man of unusual culture, a splendid orator, an eminent ophthalmologist, and an ardent champion of liberty and liberalism. His death is mourned not only in medical circles but also by men of all sorts and conditions.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Budapest Royal Medical Society.

ON Dec. 12th the closing of the year was celebrated by the Royal Medical Society. After Professor Bokay's opening speech, Dr. T. Lévai, the secretary of the society, read his report. First he paid a tribute to the memory of those whom the society lost during 1908. These included amongst the foreign correspondents Professor Berger (Paris), Professor Bezold and Professor Voit (Munich), Professor Reverdin (Geneva), Professor Schrötter (Vienna); and, further, Frederick Esmarch and Theodore Duka (London). The last had won honour and esteem for Hungarian medicine in England. They owed special gratitude to Dr. Duka in that he welcomed several members of the society in his London home and introduced them to many English scientific societies where his influence assured them a cordial reception. On July 5th the society lost one of its oldest members, Dr. Charles Thau, professor of chemistry. "We who are gathered here," said the secretary, "have almost all been his pupils. He taught us to recognise the real worth of science and its representatives. His fellow professors intrusted him with the opening address of the 'Markusovsky Jubilar' lectures. All the chief foreign universities honoured him as a past master of the chemical sciences. He introduced the first dynamo-electric machine into our country in the year 1874, bringing it personally from England." The secretary proceeded to eulogise the energy of Professor Frederick Korányi in delivering a series of three lectures during the year, in spite of his advancing age. He seemed to be one who would never grow old in mind or body. His Majesty, King Francis Joseph I., had conferred a barony upon him and his line, which was the first case in which this honour had been awarded to a medical man. "As a token of our deep reverence," said the secretary, "I lay three fresh laurel twigs beside his coronet on behalf of the society as a guerdon for his three lectures." Another official lecture was delivered on Feb. 22nd by Professor W. Tauffer (professor of gynæcology) on Twenty-five Years' Experiences in the Treatment of Myomata. The secretary recalled that in the year 1887 Professor Tauffer performed a laparotomy in the old gynæcological clinic in the presence of a very illustrious company. Besides representative Hungarian surgeons there were present also Sir Spencer Wells and Professor Humphry of Cambridge. Sir Spencer Wells then acknowledged that Professor Tauffer had firmly established scientific gynæcology in Hungary. A third official lecture was delivered by Professor Dollinger with the title "John Balassa (late professor of surgery) and the Modern Conservative Treatment of Tuberculous Inflammation of the Bones and Joints." This lecture won the Balassa prize for Professor Dollinger. Dr. Lévai finished his address with these words: "The medical faculty of our University is the most frequented excepting the Paris University. Our medical institutions are without exception in the first rank and our Medical Society is long established and of good repute. In these we have raised up a worthy temple for Minerva Medica. We have our official priests and the smoke of the altar fires rises ever higher. The coming International Congress will do much to spread abroad the fame of this temple. Despite the isolation of our language I believe the time will come when the centre of medical sciences will be found in Hungary."

Ten Years' History of the Tuberculosis Campaign.

Dr. Franz Tauszk, lecturer at the University of Budapest and secretary of the Sanatorium Association, has edited the history of ten years' medical, social, and educational work in a massive volume with the above title. From this book I learn that the Sanatorium Association was initiated as the result of the active work of Professor Korányi in 1898. He called upon society at large to organise some effective movement against the most terrible of wasting diseases and he succeeded in interesting the *beau monde* of Budapest in the formation of an association. He secured Count Batthányi for the presidency and Baron Fred. Harkányi as vice-president. A ladies' committee has been formed under the patronage of Princess Clotild and Countess Andrassy. The first practical outcome of the association was the erection of the Queen Elizabeth Sanatorium, of which Professor D. Kuthy has been made medical superintendent. From the statistics of this sanatorium I gather that since its opening 3230 patients have been treated; of these, 85 per cent. of patients who were in the first stage of the disease, 40 per cent. of those in the second stage, and 12 per cent. of those in the third stage regained their full working capacity. Clinically 54·8 per cent. of the first class were considered as cured. According to the returned question forms 80 per cent. of the dismissed patients remained capable of doing some work. The idea of erecting a dispensary for the outdoor treatment of tuberculous subjects by the provision of medical aid, medicine, food and fuel came from Professor Müller. In 1906 the first dispensary was opened under the support of the Ministry of Hygiene and the superintendence of Dr. Kovacs, Dr. Verebely, and Dr. Pollacsek. According to the statistics, there are 600 new patients every month; they are supplied with printed instruction how to defend themselves and their neighbours from tuberculosis. If necessary the patients are also visited in their own homes and disinfection of the rooms is carried out free of charge. The Sanatorium Association has established a weekly paper, edited by Dr. Tauszk and Professor Kuthy, with the title of *Tuberculosis*. This periodical, in conjunction with popular lectures and reading, is intended to awaken and to propagate interest in the movement. In order to show what a great work is done by the voluntary co-workers of the sanatorium, the secretary, Dr. Tauszk, mentions in his book that his office has had 19,742 documents to deal with during the year 1906–07. The

Sanatorium Association has for its motto "No tuberculous patient must die before every measure to cure him has been exhausted."

Hypochondria.

In the latest number of the *Gyógyàszat* (*Treatment*) Dr. Max Schächter, the editor, writes on Hypochondria. This disorder stands on the borderland between mental diseases and bad habits. He says that although hypochondria may lack an objective background, still we have no right to regard it as non-existent and beyond hope of cure. Hypochondria is a disease—as explained fully in another article of the same number of the *Gyógyàszat*—and to be classified among mental diseases. The practical importance of this classification is great. If hypochondria is a disease then a physician has to deal with it as a disease, although he need not send every patient to a mental specialist. It is to be admitted that the methods of treatment are yet imperfect, but in the hands of a skilled physician much may be done. Hypochondriacs have always been the best paying victims of charlatans, but if we deal with them earnestly and honestly, says Dr. Schächter, we shall earn their lasting gratitude.

Jan. 11th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Immunisation of Soldiers against Enteric Fever.

THE Surgeon-General of the Army, Dr. Robert M. O'Reilly, recently called a conference of medical men of science at Washington to consider the question of immunising the force against enteric fever by vaccination. As a conclusion of this conference it is recommended that the method should be adopted and carried into effect. The following is the statement made:—

> The Board is convinced of the usefulness and harmlessness of anti-typhoid vaccination and recommends that the practice of voluntary vaccination be introduced in the Army of the United States as a practicable means of diminishing the extent of typhoid fever.

Remarkable Reduction of Sickness and Mortality in the Panama Canal Zone.

The effect of intelligent sanitation of a most unhealthy tropical region upon the health of foreign labourers grows more and more remarkable as the monthly sanitary reports come to hand. The report of the Isthmian Canal Commission for September shows a sick-rate of 25·09 per 1000, compared with 27·28 for 1907 and of 37·74 for 1906. That is, comparing September, 1908, with September, 1906, there was a saving in the working force of 16,200 days of illness. The death-rate shows the same improvement. In September, 1905, the rate was 32·52 per 1000; in September, 1906, 57·34 per 1000; in September, 1907, 28·63 per 1000; and in September, 1908, 12·78 per 1000. The sickness and death-rate of the labourers in the canal zone are less than among the population of New York. The death-rate among negroes has fallen in the past three years from 67 per 1000 to 10·65 per 1000. Dr. Gorgas, chief sanitary officer, states that the number of cases of malaria may be considered an index of the conditions of sanitation; thus, in September, 1907, there were 1811 cases of malaria; in September, 1908, 1410, showing a decrease of 401 cases. No case of yellow fever or plague has occurred in the canal zone within the last two years.

Pasteurised Milk Officially Recognised.

The New York Milk Commission approves of the pasteurisation of all milk which has not been produced under sanitary conditions, and has not come from tuberculin-tested cattle and cattle otherwise free from disease, and which cannot be supplied to the consumer with a sufficiently low bacterial content to offer safety from milk-borne infection. An ordinance embodying the conclusions of this Commission has been introduced into the Board of Aldermen which will undoubtedly pass that body and thus prevent the sale in this city of milk and cream not pasteurised that comes from dairies where herds are not certified by the Board of Health to be free from tuberculous disease.

Higher Death-rate among Women.

The Registrar of the New York Board of Health has recently instituted a comparison of the death-rate of women in 1868, which time, he states, marks the entrance of the larger number of women into industrial fields, with the records for 1907. It appears that the death-rate for women between the ages of 45 and 54 for the year 1868 was 17·69 per 1000, as compared with 19·67 in 1907; between the ages of 55 and 64 the death-rate in 1868 was 29·37; and in 1907 38·43; for 65 years and over the rate for 1868 was 88·40; while for the year 1907 it was 97·30. From all diseases except tuberculosis the increase has been uniform. The Registrar states that the increase is due to the incursion of women into industry where conditions exist entirely alien to their lives 40 years ago. Life insurance companies have long since recognised this fact and have regulated their risks accordingly.

The Hospital Ship on Trial.

The proposal of the President to place the hospital ship *Relief* under the command of a surgeon during the recent cruise of the fleet in the Pacific met with such strenuous opposition that the Chief of the Bureau of Navigation resigned his position when the order took effect. But the result has proved the wisdom of the President's action. For five days the ship was recently exposed to a fierce typhoon and her delay in reaching Guam, the port of destination, on that account led naval officers to predict her loss through bad management. But her safe arrival and the account of her successful encounter with the disasters wrought by the storm—viz., disabled engines and a disastrous fire—proved that a capable surgeon is as fit to command a ship at sea as any other man of equal nautical experience.

School of Preventive Medicine.

Columbia University of New York is to incorporate among its departments a school of sanitary science and public health. The scheme proposed contemplates two courses of instruction—viz., one leading to the degree of public health officer and the other to that of sanitary inspector. This school will meet a growing demand of municipalities in all parts of the country for competent health officers and sanitary inspectors.

Methods of Rescuing Miners.

The great loss of life among miners during the last few years has led the United States to undertake the establishment of rescue stations in all of the principal coal fields. These stations are to be in charge of the technological division of the Geological Survey which will place in charge of them mining engineers trained in the use of rescue apparatus.

Jan. 2nd.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Public Health and Ootacamund.

THE proposal of the Ootacamund municipality that it should be supplied with a health officer has been negatived by the Government which observed that if the council desired such an official his office should be combined with that of chairman. No doubt a health officer would have proved of invaluable service during the current year when plague, enteric fever, small-pox, and cholera prevailed, not only in the stations and cantonment, but also in the district. Statistics for the latter show that plague prevailed in South-East Wynaad and on the plateau, Gudolur alone accounting for 90 cases with 58 deaths. Small-pox also existed and 30 cases were reported with 10 deaths; while cholera, which it has always been contended could not appear at this elevation except in a sporadic form, attacked 117 people with 78 deaths. Enteric fever in the district has been lost in the returns as fever, but we heard enough of it in the towns where better informed officials were able to form the diagnosis. The Government has therefore more accurately ascertained what Ootacamund wants than its local representatives and it is hoped that 1909 will find a health officer installed in the chairman's seat and that a cleaner bill of health will be presented to visitors.

The Consumption of Quinine.

The world's consumption of quinine is put at 1,000,000

pounds weight yearly and it might be thought that India with its vast population would take a considerable proportion of this amount. But its usual consumption is only 50,000 pounds, and it is only in exceptionally malarial seasons, such as that which is now drawing to an end, that the demand increases. The fact seems to be that in spite of the recognised virtues of the drug there is not the machinery for its universal distribution. Packets can certainly be bought at rural post-offices, the prices charged being small, but there is no one concerned in pushing the sales. In many parts of the country also there is a disinclination to take quinine in the form of powder and the sugar-coated tablet has not yet been generally tried. Even that might be regarded with suspicion by ignorant villagers. In any case it must be admitted that India does not consume nearly as much quinine as might be rightly expected, and the prevalence of malaria, in the autumn months particularly, proves the necessity for steadily forcing the drug upon the notice of the people. The medical authorities in the various provinces would probably be only too glad to have quinine in large quantities placed at their disposal by the Government, and they would soon find means to insure its general distribution. Prices have ruled extraordinarily low for the past two or three years, and it would be a simple matter to make contracts on advantageous terms. The expenditure would not be large even if the annual consumption were doubled, for the European market is glutted at present and there is no sign of any fresh demand springing up. The cheapening of quinine is entirely due to the development of the cinchona plantations in Java, the most fertile island in the world. From a translation of an article in the *Indische Mercuur* it appears that overproduction of the bark has taken place, and that prices are greatly depressed. Dr. Van Garkom, the great authority on the subject, states that Java practically controls the cinchona trade, the production elsewhere (as in British India) being negligible for commercial purposes. The best gardens are those situated at over 6000 feet above sea-level, as a certain insect pest attacks the tree at lower elevations. The greatest producer of all is the Government but there are also several wealthy firms engaged in planting. During the Russo-Japanese war prices rose and this doubtless stimulated planters with small capital to start plantations. The result has been overproduction and over-stocking of the market. There are now two proposals under consideration: one to form a syndicate to buy up all the bark at fixed prices and to store the surplus so as to control the market; the other, to thin out the trees and thus curtail production at the same time that a better class of bark would be produced. Dr. Garkom favours the latter plan as he considers that the stored bark would be a perpetual menace and would prevent any rise in prices. A planter of 30 years' experience, argues that while the stocks of sulphate of quinine are now extremely large, the store of bark is small, and he suggests that planters and alkaloid-makers should agree to a limitation of the quantity put into the market. It is impossible to say what views will prevail, but there seems no prospect of quinine being dearer for a long time to come. It can actually be bought in Europe and imported to India for less than it can be manufactured in this country. The Government quinologist in India may go on manufacturing the bark, but private enterprise can no longer face the competition of Java.

Deaths from Cholera and Small-pox.

An interesting and suggestive paper has been issued showing the number of deaths and the death-rate from cholera and small-pox per 1,000,000 persons living in India for each of the last 30 years and also the deaths from plague since 1896. In the first year of the return, 1876, the cholera death-rate was 3433·6 per 1,000,000 and in the year 1906 it was 3052·7. In 1876 the death-rate from small-pox was 1009·9 per 1,000,000, and in 1906 it was 484·6. This does not support the argument that the decline in small-pox is due mainly to improved sanitation, for there is no disease more directly dependent upon insanitary conditions than cholera, which shows no decline corresponding to that of small-pox; but the period under review is practically that which has elapsed since the passing of the Act for the compulsory vaccination of children in municipalities and cantonments in 1880. The decline in small-pox, however, has not been quite progressive, for the lowest figure recorded —233·1 per 1,000,000—was in 1899. The plague mortality rose from 10·4 per 1,000,000 in 1896 to 4167·7 per 1,000,000 in 1905. In the last year of the period it fell to 1328·3 per 1,000,000.

Plague in Burma.

Mr. F. Lewisohn, secretary to the Government of Burma, in the course of a long letter addressed to the Government of India, has dealt with the measures so far adopted to extirpate plague in Burma. He has given a brief *résumé* of the report of operations which was invited by the local Government. He says that despite attempts to induce people to submit to inoculation practically no one was inoculated. In concluding this long letter Mr. Lewisohn says that the result that has been attained so far may be summed up as having been the keeping down of plague rather than its extirpation. At the present time plague is quiescent throughout almost the whole of Burma, but it is too early as yet to attribute it to the measures adopted as described in the report. It will be easier to estimate the result achieved when the next plague season arrives. The Lieutenant-Governor is satisfied that every measure is being adopted which can possibly conduce to the suppression of plague and which is within the power of the local authorities to take. The Lieutenant-Governor will do what he can to aid the local officers with the means at his disposal, but those means are limited and such measures are extremely costly.

Dec. 15th, 1908.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

The Opium Campaign.

MATTERS in relation to the opium question are not making very much progress in the way of reform at present. Prominent officials are punished from time to time, but vast numbers of the common people still smoke. The immense size of the empire, its decentralised condition, and lack of communications are serious obstacles in the way of carrying out decrees of the Central Government. A month ago stringent instructions were issued to all the provinces ordering them to report the decultivation of the poppy within two months; if any disobeyed they were to be punished severely and the land under the prohibited crops confiscated. One of the last acts of the late Empress Dowager was to intimate to a high official that China must act up to the spirit of her treaty with Great Britain and that no leniency was to be shown to opium smokers. But with the best intentions in the world the attempt to eradicate the habit is bound to fail unless it is carried out much more effectually than at present. Many thousands of people have vested interests in the growth, manufacture, and sale of opium, and it is a large item of national revenue from which numerous officials "squeeze" sums of varying amount as it passes through their hands. A correspondent writing from the big and important province of Shan-si says: "Up to the present the edicts and prohibitions have been largely neutralised and the blame lies chiefly with the magistrates. In one city the traffic has even been worse than before; the opium shops were supposed to be closed and so no tax was imposed and in consequence of this a larger number of shops than ever were opened, the magistrate winking at the fact as the profits were higher." Throughout the country a good deal of uneasiness prevails as to the future action of the Government. Proclamations have been issued for the past two years telling the people to sow grains instead of opium. But as no action has been taken against those who chose to disobey they are naturally inclined to risk a third crop. Meanwhile the sale of anti-opium pills (mostly containing morphine) is being actively pushed by foreign and native druggists and all kinds of quack vendors, and by order of H.E. Yuan Shih K'ai (the most famous official in the empire) the Anti-opium Bureau has adopted an official pill which is being issued to many smokers in the capital. A quaint touch of Oriental ingenuity to harass the persistent habitués of the drug has been invented by the superintendent of police at Canton. This official has issued 20,000 wooden licences, ten inches long by eight inches broad and three-fifths of an inch thick. On the front of these boards are characters giving the smoker's name and address and the quantity allowed him per diem, and on the back are the opium regulations. The licensees are not

allowed to cover their boards when going to buy opium but must wear then conspicuously so that all may see them. Next year these wooden licences are to be two feet long by one and a half feet broad and three-fifths of an inch thick. If the Government were to go on doubling the size of them progressively in each successive year it would become ridiculous ere long. Yet it is said that this is positively the intention of the authorities. We are looking forward to the deliberations of the International Commission at Shanghai. In conversation a day or two ago with a Chinese official I was interested to note that he had read with some amusement how one of the American delegates had found, when collecting information previously to his arrival here, that there was a great deal of cleansing of the American Augean stable required with regard to the huge amount of opium and morphine consumed in New York.

Closure of Fæcal Fistula.

An abnormal feature in a recent case of fæcal fistula which occurred here might make it worth mention. The patient was a young soldier admitted to hospital with extensive emphysema, the result of a stabbing affray. While in hospital he developed typhlitis from which an abscess speedily formed. This was opened but was followed by the establishment of a fistula. The indefinite length of time which these fistulæ take to heal made early operation for closure advisable because of his military duties. A curved incision was made on each side of the fistula and an oval island of abdominal wall tissue was drawn out of the wound surrounded on all sides by adhesions. These were separated in turn and it was then found that the base of the appendix vermiformis was situated at the junction of the cæcal opening through the abdominal wall showing that the cæcum was twisted right round as the position of the fistulous opening was at McBurney's point. An elliptical piece about two and a half inches long, which included the artificial anus and the appendix, was removed from the cæcum, the gap in the bowel being closed by a double row of sutures. Recovery was uneventful and the man was fit for duty in 24 days though advised to wear an abdominal bandage for some time. During a subsequent month's work he has suffered no inconvenience.

An English-Chinese Lexicon of Medical Terms.

This work, which has just been issued, has been compiled by Dr. P. B. Cousland for the Terminology Committee of the Medical Missionary Association of China. The aim of this committee is to further the translation of Western medical text-books according to a uniform terminological standard and it is from this lexicon that all the terms employed will be taken. It is based on Gould's Medical Dictionary and the Nomenclature of the Royal College of Physicians of London, and numerous text-books have been consulted to aid in the selection of the most important and recent terms. It is a painstaking attempt to lay a scientific foundation for the future medical science of China. The principles upon which the committee worked were to use the Chinese name when possible; to translate the meaning of the foreign term, making it as terse as is consistent with clearness; to utilise the many obsolete or rarely used characters in the Emperor Kang Hsi's dictionary; to translate or phoneticise the foreign terms, and to coin new terms when necessary. The most important step for the committee to take now will be to secure the official acceptance of the Board of Education, but this will be by no means an easy matter to carry through, as there is some idea, I gather, of the Board appointing some Chinese foreign-trained medical men to furnish it with an official terminology of its own founded on Japanese lines.

Peking, Dec. 14th, 1908.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)[1]

Milk Standard.

REPRESENTATIVES of the Retail Dairymen's Association of Melbourne recently waited on the Minister of Public Health to request a reduction in the standard of fatty solids in milk which the Food Standards Committee had fixed at 3·5. The secretary said that 1200 milk vendors regarded this as too high for the spring and summer months. The standard should be 3·3, as in New South Wales. While drastic measures were applied between retailer and consumer, little was done as between producer and retailer. A regulation should be made compelling the former to produce a milk at least two points higher in fat than that retailed. The Food Standards Committee has since declined to recommend the Minister to alter the standard.

Dust Nuisance.

Melbourne is probably one of the dustiest cities in the world and complaints are frequent that the municipal authorities never approach the trouble with any determination. A conference of municipal bodies has now been arranged to consider the matter and to endeavour to devise some method of mitigating the nuisance. A simple method in the city, at all events, would be to extend wood-paving throughout the streets but councillors appear either timorous of the cost or wedded by long association to the old and ineffectual water-carts. There are 187 miles of streets in the city and 130 of these are 33 feet or more in width.

A Fatal Error.

A young woman met a tragic death in Sydney recently in very painful circumstances. She was suffering from earache and went into a druggist's shop to obtain a remedy. The proprietor of this establishment was ill in bed but his wife proceeded upstairs and asked him what she was to give. He told her to tell his son to dispense 10 grains of quinine. She did so and pointed to a bottle which she thought contained quinine. The boy did as requested and the patient left with the drug. Shortly after he discovered that he had dispensed from a wrong bottle and had given strychnine. The druggist's wife then went to the patient's house and finding that she had taken the powder gave an emetic of salt and water. The unfortunate young woman died shortly after. A verdict was recorded that the death was accidental. Neither the druggist's wife nor his son had any knowledge of dispensing.

Melbourne Children's Hospital.

Dr. Robertson (assistant officer, Board of Public Health) has submitted a report dealing with an investigation made as to the transmission of infectious diseases among patients at the Melbourne Children's Hospital. After stating that it has been practically admitted that in certain circumstances infection was transmissible from out-patients to in-patients he made the following recommendations:—

1. That the staff of the out-patient department be separated from that of the in-patient department. That separate living quarters be provided for the two staffs.
[This will affect two resident medical men and three nurses as well as the honorary staff.]
2. That as an immediate precaution doctors and nurses in the out-patient department wear overalls which can be removed on entering the in-patient department.
3. That with a view to detecting diphtheria carriers "swabs" be taken from the throats of all out-patients.

These recommendations are not viewed as extremely practicable.

Infant Mortality.

The medical officer of health of Sydney has laid before the council a report on the plan of endeavouring to induce mothers to breast-feed their infants, which has been pursued during the past three years and which consisted in the appointment of a woman inspector. During the above period 4748 nursing mothers were visited. This represents 52 per cent. of all births and 67 per cent. of those registered outside public institutions. The average age of children visited was 5·3 weeks. The result has been:—

1904.		
Number visited ...	781	
Breast only	564	(72·0 %)
,, partial... ...	166	(21·0 %)
Not breast	51	(6·5 %)
1905.		
Number visited ...	1455	
Breast only	1114	(76·5 %)
,, partial ...	250	
Not breast	91	(6·3 %)
1906.		
Number visited ...	1240	
Breast only	977	(78·8 %)
,, partial ...	210	
Not breast	53	(4·2 %)
1907.		
Number visited ...	1272	
Breast only	1019	(80·7 %)
,, partial ...	202	
Not breast	51	(4·0 %)

Dec. 4th, 1908.

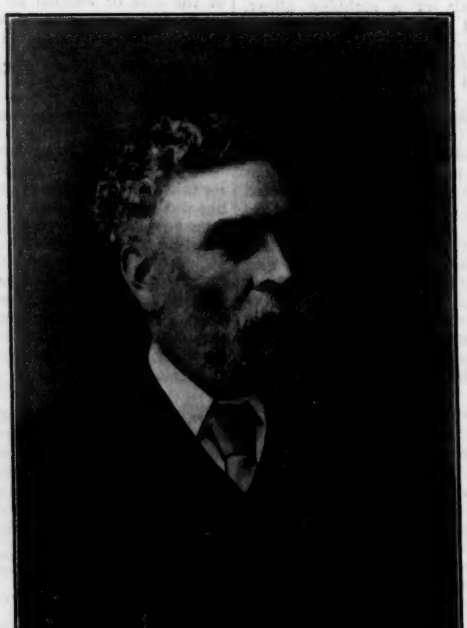
[1] Our correspondent has also sent us an interesting *résumé* of the proceedings at the Australasian Medical Congress, held at the close of last year in Melbourne, for which we have been unable to find space in this issue.—ED. L.

Obituary.

DOUGLAS ARGYLL ROBERTSON, M.D. ST. AND., F.R.C.S. EDIN., F.R.S. EDIN., LL.D. EDIN.,

HONORARY SURGEON OCULIST TO H.M. THE KING IN SCOTLAND; CONSULTING OPHTHALMIC SURGEON, EDINBURGH ROYAL INFIRMARY.

ON the first Monday of the New Year it was known in Edinburgh that Dr. Argyll Robertson had died in India on the previous day. It is not generally known what death was due to, but that it must have been sudden and unexpected is assumed from the fact that he had gone to India on a visit and that there had been no intimation that his health was causing anxiety. The intimation of Dr. Argyll Robertson's death recalls the fact that it is little over a year ago that two well-known surgeons, Sir Patrick Heron Watson and Professor Annandale, were lying dead in Charlotte-square. That same residential square was equally closely associated with Dr. Argyll Robertson's name. To the medical profession all over the world his name is known wherever locomotor ataxy is studied or taught, his name having become inseparably attached to the important eye symptom of that disease known as the "Argyll Robertson pupil."



DR. ARGYLL ROBERTSON.
(From a photograph by Messrs. Moffat, Princes Street, Edinburgh.)

Dr. Argyll Robertson was not an old man, and when he was last in Edinburgh no one who met him would have thought of him as old; his eye was perhaps not so piercing as when he was 20 years younger, but his figure was as upright as ever, and he still retained the handsome and striking appearance of his earlier years. He was born in Edinburgh in 1837 and was the son of Dr. John Argyll Robertson, an Edinburgh surgeon who had been President of his College in 1848, and took a special interest in eye surgery. The son studied in Edinburgh, St. Andrews, Berlin, and Prague, and graduated M.D. at St. Andrews in 1857. He became a Fellow of the Royal College of Surgeons of Edinburgh in 1862. In the following year he published a paper in the *Edinburgh Medical Journal* and the *London Ophthalmic Journal* on "The Calabar Bean as a New Ophthalmic Agent." The important observations recorded in these papers are attributed to a hint as to the action of calabar bean received from Dr. (now Sir) T. R. Fraser who was at that time laying the foundation of his own reputation by investigations on the action of that bean. In 1869–70 Dr. Argyll Robertson published in the *Edinburgh Medical Journal* a paper "On Eye Symptoms in Spinal Disease." It was the observations made at that time that led to his world-wide reputation and to his name being attached to the pupil phenomena of tabes. From 1867 to 1870 he held the post of assistant surgeon in the ophthalmic department of the Royal Infirmary, his chief being Dr. William Walker. In 1870 he was made a full surgeon to the department and became senior in 1882, when Dr. Walker retired. He held the senior post in the infirmary until 1897, when he retired and was made a consulting surgeon to the institution. During the tenure of office in the infirmary he taught ophthalmology to many generations of students and saw great changes in his own department. Many men all over the world will be able to recall the humble quarters allocated to the eye department in the old Royal Infirmary and will be able to compare them with the stately rooms in which the work is now carried on in the new Royal Infirmary. Dr. Argyll Robertson was an expert, a bold, and a successful operator, and had a very large consulting and operating practice for many years. He held almost every office of distinction open to him. He was honorary surgeon oculist in Scotland to Queen Victoria and thereafter to H.M. the King. He was President of his College in 1886; at various times he was President of the Ophthalmological Society of the United Kingdom, of the International Ophthalmological Congress, and of the Edinburgh Medico-Chirurgical Society. He was an honorary member of various foreign societies; the University of Edinburgh conferred upon him the degree of Doctor of Laws and his professional brethren presented him with his portrait painted by Sir George Reid, R.S.A., a replica of which hangs in Surgeons' Hall.

Dr. Argyll Robertson had, however, distinction beyond and outside his eminence as an ophthalmic surgeon. He was for years a leading amateur golfer. He won the gold medal of the Royal and Ancient Club on several occasions and the silver cross on two occasions. In the Honourable Company of Edinburgh Golfers he won the gold medal in three different years. It is said that Dr. Argyll Robertson in his early professional career was selected to do an eye operation by some one who had seen him play in a golf match, the onlooker deciding that a man who had such a steady hand and eye under such strain was the best man to perform an operation requiring nerve, steadiness, and surety of hand. In social life he was kind and friendly to all and no man was more universally esteemed, liked, and trusted by his brethren. He married in 1882 the fourth daughter of Mr. W. M. Fraser, of Findrach in Aberdeenshire, a lady who by her grace and kindliness was equally popular with her husband. At the time of his death they were in India paying a second visit to the Thakur of Gondal. Much sympathy is felt with Mrs. Argyll Robertson left a widow in a distant land. There is no family.

ALEXANDER PATTERSON, M.D. GLASG., F.R.C.S. EDIN., F.F.P.S. GLASG.,

CONSULTING SURGEON TO THE WESTERN INFIRMARY, GLASGOW, ETC.

A VERY distinguished Ulsterman, Dr. Alexander Patterson, died on Jan. 5th at his residence, The Cottage, Drapers-town, county Derry. He was born in the same house in 1833, the property with a considerable extent of land having been in the possession of his family for several generations. Dr. Patterson, like many other Ulstermen of his time, studied in Glasgow, where, after a distinguished career, he graduated M.D. of the University in 1854; while in 1860 he obtained the Fellowship of the Royal College of Surgeons of Edinburgh, and in 1869 he became a Fellow of the Faculty of Physicians and Surgeons of Glasgow. In 1879 he was appointed one of the examiners in surgery for the last body and continued to act until within a few years of his retirement which occurred in 1904. After graduating Dr. Patterson

started as a general practitioner in Glasgow but always showed a bent for surgery. He was for many years closely connected with the Glasgow hospitals, being a member of the medical staff of the Glasgow Lying-in Hospital and in 1868 being appointed dispensary surgeon to the Royal Infirmary, a post which he held until 1875. In 1872 he was elected a surgeon to the Glasgow Lock Hospital and held that position until he retired from practice. In 1872 he was also appointed as one of the surgeons to the recently opened Glasgow Western Infirmary, the others being Sir George Macleod and Dr. Buchanan. He retained this post until 1902, and thus for a period of over 30 years Dr. Patterson was a member of the surgical staffs of the Glasgow hospitals. When he was appointed he retired from general practice and devoted himself to consultant surgical work.

As a writer Dr. Patterson was not very prolific, but what he wrote was of the highest order, and, as examples, his papers on strangulated hernia and on the treatment of aneurysm by digital compression may be mentioned. He was a pioneer in renal surgery, and in 1880 he published the first case of deliberate nephrotomy for removal of stone from the kidney. From the account given by him of this operation it is clear that he exposed the kidney with the express purpose of incising it to remove the stones. He was therefore one of the very first (if not the first) to do this operation.

As an operator he was possessed of the greatest dexterity and could work equally well with either hand. His success was greatly forwarded by the fact that, having been attached to the Royal Infirmary at the time when Lister was introducing his antiseptic system, he recognised its enormous advantages and fully adopted it in his future practice; indeed, so early as 1873 he spoke in the Glasgow Medico-Chirurgical Society of its surpassing value to the surgeon, ranking antiseptics second only to anæsthetics. Dr. Patterson was particularly skilful as a herniotomist and—at a very early period in the history of that operation—of ovariotomy he recorded a long series without a death. He followed Keith's plan of treating the pedicle with the actual cautery. All Dr. Patterson's old students must remember his brilliant handicraft in amputating a limb. As an inventor he will be remembered for the bristle probang which is still so largely used for removing foreign bodies from the œsophagus and for his herniotome which was a distinct improvement on that of Sir Astley Cooper. Dr. Patterson was also one of the very first to practise the inunction treatment in syphilis.

As a teacher he was extremely practical and took the greatest pains in giving his students the very best of his own extensive experience. In dealing with his patients he was always most anxious that an operation—if necessary—should be done as soon as possible. Like the great pioneer, Dr. Henry Mac Cormac of Belfast, Dr. Patterson early showed his belief in fresh air. He insisted on the top windows in his hospital wards being kept wide open night and day and he often called attention to the fact that patients who on entering them had bronchitis, soon got rid of their coughs, and he always stated that his nurses were the healthiest set of nurses in the infirmary.

Though extremely occupied with professional work, Dr. Patterson had other tastes. In his early days he was a Volunteer and at the opening of Loch Katrine waterworks on Oct. 14th, 1859, he formed one of Queen Victoria's guard of honour. He had a large collection of medals, tokens, coins, and other antiques, and he had an admirable collection of editions of Burns's works. He was a widower and he leaves a grown-up family. About four years ago Dr. Patterson retired from practice and returned to his native place in Draperstown to reside, where he died and where he was buried on Jan. 8th. Dr. Patterson was a man of great ability, a distinguished surgeon, and a true friend who will long be remembered by those whose intimacy with him enabled them to see his immense worth and by many people living in all parts of the world who have reason to be grateful for his surgical skill, care, and attention.

JOHN WORTABET, M.D. EDIN.

THERE died at Beyrout in Syria on Nov. 22nd of last year a veteran physician who left both the medicine and the literature of the land of his adoption largely in his debt. John Wortabet was a Doctor of Medicine of Edinburgh and was a worthy upholder of the Scottish tradition that tends to bind science and scholarship closely together. As a prominent practitioner in Beyrout for many years he was beloved by the Moslem no less than by the Christian population. He was physician to the Hospital of the Knights of St. John in that city and was professor of anatomy and physiology in the American College. His responsibilities as a teacher induced him to make Arabic translations of Gray's "Anatomy" and other standard medical text-books and he was a frequent contributor to the Egyptian medical and literary reviews. In spite of his great activities in the field of medical education he found time to cultivate general Arabian literature and was the joint author of the Arabic-English and English-Arabic dictionaries, besides being the anonymous reviser of the whole of the Arabic translation of the Old Testament and a portion of the New Testament. He published recently an interesting digest of the philosophical fruits of his researches in a book called "Arabic Wisdom." For his distinction in medicine and letters the Khedive bestowed upon him the order of the Medjidieh and he also held the order of the Knights of St. John. Dr. Wortabet died in his eighty-second year, mourned by several sons and daughters, two of the former being followers of his own profession. In both Anglo-Egyptian and native circles his loss is widely and deeply regretted.

WILLIAM SHEPPARD, M.R.C.S. ENG., L.S.A. LOND.

AT Ealing, on Dec. 15th, there passed to his rest a veteran member of the medical profession—Mr. William Sheppard, formerly of Ashford, Kent. Mr. Sheppard was born at Cirencester in 1821 and spent his early youth in Wilts and Gloucester. He was a pupil of the late Mr. Warner of Warminster and proceeded to St. Bartholomew's Hospital. Mr. Sheppard started practice at Ashford about 1848, where he was associated with the late Dr. Wilks, J.P., for 15 years. He then until 1878 practised alone. During these years he worked successfully in many ways for the rise and progress of his town, besides having a large general practice. To quote an old friend of his, "He was a good listener, gentle and patient in sickness, and successful in the treatment of disease. In his day he was reputed locally as an authority on urinary sediments, on the technique and handicraft of blood-letting, and on the alvine antisepsis of mercury." To the poor Mr. Sheppard was not only a physician but a friend in sickness and poverty. In 1882 he settled and remained at Ealing for the rest of his life. Both at Ashford and Ealing he took a deep interest in churches, hospitals, and institutes that make for the elevation and betterment of mankind. He was senior trustee for many years of Willesborough Free Church and promoted the development of religious life at Swindon, Wilts, and at Ealing. He was also at one time an ardent Freemason.

Mr. Sheppard passed away on Dec. 15th, 1908, and his remains were taken to Ashford where the chief mourners included his children and grandchildren; many members of the profession, patients, and friends were also present. Mr. Sheppard married Frances Anne, eldest daughter of the late Mr. W. Philpott of Canterbury, who died in 1898 and to whose memory a memorial window was erected (1901) in St. Peter's Church, Ealing.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Kuraieff, extraordinary professor of medical chemistry in the University of Kharkoff.—Dr. Andrew J. McCosh, professor of surgery in the College of Physicians and Surgeons, New York.—Dr. Justin Lemaistre, professor of anatomy in the Limoges medical school.—Dr. Chauvel, formerly *médecin inspecteur* of the French Military Medical Service and member of the Paris Academy of Medicine.—Dr. Alfred Kühne, formerly assistant to Professor Albert of Vienna and subsequently surgeon in the Austrian army of occupation during the war between Bulgaria and Servia. More recently his name has been prominently before the public on account of his having released a man who was pinned down under a locomotive in a railway accident by amputating both his legs.—Dr. Konrad Majewski, a voluminous writer on military surgery.—Dr. Boddaert, a well-known surgeon of Ghent, in consequence of blood poisoning contracted in the performance of his professional duties.—Dr. Franz von Preuschen-Liebenstein, formerly

extraordinary professor of midwifery and gynæcology in the University of Greifswald, aged 64 years. Dr. R. Blache, *associé libre* of the Academy of Medicine of Paris.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the quarterly First Professional Examination of the Conjoint Examining Board, held on Jan. 5th, 6th, 7th, and 8th, the following gentlemen were approved in the subjects indicated:—

Chemistry and Physics.—James Dorrington Bangay, St. Bartholomew's Hospital; Henry Cecil Billings, London Hospital; William Herbert Blakemore, Manchester University; Edward Albert Brock, St. Bartholomew's Hospital; Thomas Henry Brown, St. Bartholomew's Hospital; James Douglas Driberg, London Hospital; Louis Edward Forster, Liverpool University; Samuel Sowray Greaves, Leeds University; Frederick Theophilus Hill, St. Bartholomew's Hospital; Harold Dunmore Lane, London Hospital; Oscar Gladstone Maginness, St. Bartholomew's Hospital; Arthur Wellington Matthew, London Hospital; Gerald Woffindin Maw, Bedford Modern School; Henry Marie Alphonse Menagé, St. Bartholomew's Hospital; Herbert Henry Powys Morton, King's College Hospital; Francis Henry Mosse, B.A. Oxon., Oxford University and King's College; Noel Spencer Nairne, St. Thomas's Hospital; Thomas Harold Parsons, Birmingham University; Herbert Jack Rawson, St. Thomas's Hospital; James Albert Robinson, St. Bartholomew's Hospital; Pierre Roux, London Hospital; Charles George Cradock Vawdrey, St. Mary's Hospital; and Leslie Gordon White, Leeds University.

Chemistry.—Hugh Woodward Barnes, King's College; William Arthur Hazlerigg Noel Bell, St. Thomas's Hospital; Ralph Cay Briscoe, Oxford University and King's College; Robert Graham Brown, London Hospital; Richard Irving Dacre, University College, Bristol; Stephen Ormond Dolan, Leeds University; Harry Dudley, University College Hospital; Arthur George Bisset Fenwick, St. Thomas's Hospital; William Morris, London Hospital; Lionel Everard Napier, St. Bartholomew's Hospital; Henry Barton Owens, London Hospital; Gerald Robinson, Manchester University; and Frederic Simpson, Charing Cross Hospital.

Physics.—Edgar Bernard Argles, St. Mary's Hospital; Richard Albert Banbury, St. Thomas's Hospital; Gerald Cock, Charing Cross Hospital; Hubert Roy Dive, St. Bartholomew's Hospital; Edward Dance Fountain, St. Mary's Hospital; Cyril Austin Haynes, Guy's Hospital; George Gerald Jack, Middlesex Hospital; David Lewis, London Hospital; Joseph Lloyd, Westminster Hospital; Arthur Starkie Plant, Manchester University; Cyril Seys Ramsay-Hill, Brighton Technical College; Ibrahim Rashad, St. Thomas's Hospital; Philip Hugh Rawson, London Hospital; John Griffith Richards, Guy's Hospital; Joseph Edward Rivers, Manchester University; Charles Rees Smith, Guy's Hospital; George Sydney Stathers, Cambridge University, University College, and Polytechnic Institute; Jurin Totton, Manchester University; and Frank Hamersley Woods, St. Bartholomew's Hospital.

Biology.—Edward Victor Briscoe, St. Mary's Hospital; Ralph Cay Briscoe, St. George's Hospital; Gerald Cock, Charing Cross Hospital; John Stanley Cocks, Guy's Hospital; Reginald Curle, Guy's Hospital; William Kelsey Fry, Guy's Hospital; Thomas Watson Hancock, London Hospital; Frank William Herbert, Birkbeck Institution; James Stanley Higgs, King's College and St. George's Hospital; John Morrison McIntosh, St. Bartholomew's Hospital; Charles Harold Medlock, Guy's Hospital; John Millard, Birmingham University; Thomas Harold Parsons, Birmingham University; Claude Hollingworth Philips, Brighton Technical College; Arthur Starkie Plant, Manchester University; Philip Hugh Rawson, London Hospital; Granville Douglas Robertson, St. Mary's Hospital; Gerald Robinson, Manchester University; Pierre Roux, London Hospital; Thomas Sidney Stafford, Birmingham University; Claude de Boudry Thomson, Middlesex Hospital; Jurin Totton, Manchester University; and Leslie Douglas Wright, Guy's Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery, held on Jan. 5th, 7th, and 8th, the following gentlemen were approved in the undermentioned subjects:—

Chemistry and Physics.—Eric Bernard Armitage, University College, Nottingham; David Harold Barr, Guy's Hospital; Henry O'Neil Butler, Birkbeck Institution; John Edgar Davies, Guy's Hospital; Victor Fitzherbert Hedworth Golledge, Guy's Hospital; John Otway Hayes, Polytechnic Institute; Theodore Hesketh Jones, Polytechnic Institute; Thomas Clatworthy Kidner, Norwich Technical Institute; William Symons Lakeman, Polytechnic Institute; Lionel Scott Langley, Technical Institute, West Ham; Donald Bernard Morrish, Guy's Hospital; William Linnell Partridge, Guy's Hospital; Arthur John Percy, Royal Albert Memorial College, Exeter; Arthur George Drake Pridham, Charing Cross Hospital; Fred Quayle, Middlesex Hospital; Archibald Frank Salsbury, Guy's Hospital; Alan Douglas Edward Shefford, Polytechnic Institute; Hugh Dynevor Stephens, Technical College, Huddersfield; and Francis Joseph Tipper, Grammar School, Portsmouth.

Chemistry.—William Hood Dye, Wandsworth Technical Institute; Carl Joseph Oldham Jensen, Charing Cross Hospital; Felix Lambert Pradier, Polytechnic Institute; Harold Neish Purdom, Polytechnic Institute; Richard Angwin Rail, Charing Cross Hospital; Arnold Victor Shilton, Technical School, Birmingham; Claude Taylor, Charing Cross Hospital; and John Fitzgerald Williamson, Wandsworth Technical Institute.

Physics.—Patrick Boyle, Birkbeck Institution; Chandulal Manilal Desai, Guy's Hospital; Samuel Trude Fripp, Berkhamstead School and Polytechnic Institute; Walter Henry Glover, Wandsworth Technical Institute; Vivian Arthur Frederick Greenish, Birkbeck Institution; Denis Foster Lewis, Birmingham University; Frank Lodge, Huddersfield Technical College; Charles Edward Murch, Birkbeck Institution; and Roy Harry Barkly Pallett, Middlesex Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At the Primary Examination held recently the following candidates passed in the subjects indicated:—

PART I.

Biology.—R. A. Taylor, Manchester.

Chemistry.—K. L. Hart-Davis, Royal Free Hospital.

Materia Medica and Pharmacy.—W. E. North-Smith, Durham and St. Mary's Hospital; C. J. H. Riches, Middlesex Hospital; and H. E. Rose, Cambridge.

PART II.

Anatomy.—R. S. de C. Bennett, Guy's Hospital; J. J. Benyon, King's College Hospital; H. E. B. Finlaison, St. Mary's Hospital; A. J. Frädersdorff, Guy's Hospital; G. F. Maiden, Royal Free Hospital; and H. Rowntree, Middlesex Hospital.

Physiology.—R. S. de C. Bennett, Guy's Hospital; J. J. Benyon, King's College Hospital; A. J. Frädersdorff, Guy's Hospital; C. A. Mortlock-Brown, Royal Free Hospital; and H. Rowntree, Middlesex Hospital.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Max Rubner has been appointed Extraordinary Professor of Physiology in succession to Dr. Engelmann, resigned; Dr. Hermann Gutzmann, *privat-docent* of Speech Disturbances, has been granted the title of Professor.—*Budapest:* Dr. H. Benedict has been recognised as *privat-docent* of Medicine and Dr. Tibor Verebély as *privat-docent* of Surgery.—*Chicago* (*North-Western University*): Dr. John Gordon Wilson, of the Rush Medical College, has been appointed Professor of Otology in succession to Dr. Frank Allport, resigned.—*Cincinnati* (*Miami Medical College*): Dr. John H. Landis has been appointed Professor of Hygiene in succession to Dr. Samuel E. Allon.—*Giessen:* Dr. K. Laubenheimer has been recognised as *privat-docent* of Hygiene.—*Göttingen:* Dr. Karl Heiderich has been recognised as *privat-docent* of Anatomy.—*Iurieff* (*Dorpat*): Dr. I. Shirokogoroff has been recognised as *privat-docent* of Pathological Anatomy.—*Kazan:* Dr. Th. Shistovich of St. Petersburg has been appointed Extraordinary Professor of Pathological Anatomy.—*Kiel:* Dr. Paul Doehle, *privat-docent* of Pathological Anatomy, has been promoted to an Extraordinary Professorship.—*Leipsic:* Dr. Aldabert Gregor has been recognised as *privat-docent* of Neurology and Psychiatry.—*Louisville:* Dr. Cyrus W. Field has been appointed Extraordinary Professor of Pathological Anatomy and Bacteriology.—*Marburg:* Dr. Max Jahrmärker, Physician to the Clinic of Mental Diseases, Dr. Sauerbruck, Surgeon to the Surgical Clinic, and Dr. Wilhelm Krauss, Ophthalmic Surgeon to the University Clinic, have been granted the title of Professor.—*Munich:* Dr. Hermann Hahn has been recognised as *privat-docent* of Anatomy.—*Naples:* Dr. Carmine Cianci has been recognised as *privat-docent* of Materia Medica and Experimental Pharmacology.—*New Orleans* (*Tulane University*): Dr. Charles W. Duval has been appointed Extraordinary Professor of Pathological Anatomy.—*Palermo:* Dr. Luigi Philippson has been appointed Extraordinary Professor of Dermatology.—*Parma:* Dr. Ersilio Ferroni has been appointed Extraordinary Professor of Midwifery and Gynæcology.—*Pavia:* Dr. Umberto Mantegazza, Extraordinary Professor of Dermatology, has been promoted to the Ordinary Professorship.—*Rome:* Dr. Agenore Zeri has been appointed Extraordinary Professor of Medical Diagnosis.—*St. Petersburg* (*Women's Medical Institute*): Dr. N. M. Kakushkin has been recognised as *privat-docent* of Gynæcology.

KING EDWARD'S HOSPITAL FUND FOR LONDON.—A meeting of the General Council of King Edward's Hospital Fund for London was held on Jan. 11th at the offices of the Fund, 7, Walbrook, E.C. There were present: Mr. Hugh Colin Smith (in the chair); the Rev. T. Bowman Stephenson, D.D.; the Governor of the Bank of England (Mr. W. Middleton Campbell); the Right Hon. Sir Savile Crossley, Bart.; the Right Hon. Sir Joseph Dimsdale, Bart.; the Right Hon. Sir Ernest Cassel; the Right Hon. C. Stuart-Wortley, K.C., M.P.; Sir W. S. Church, Bart.; Sir Horace Marshall; Sir W. J. Collins, M.P.; Mr. J. Danvers Power; Dr. Edwin Freshfield; Mr. Frederick

M. Fry; Mr. John G. Griffiths; and Mr. Albert G. Sandeman. A communication was received signed by His Royal Highness the President appointing for the year 1909 the members of the general council, the finance committee, the distribution committee, the convalescent homes committee, and the executive committee, and the officers—viz., honorary treasurer, Lord Rothschild; honorary secretaries, Sir Savile Crossley, Bart., and Mr. Frederick M. Fry; honorary solicitors, Messrs. Freshfields; honorary auditors, Messrs. Deloitte, Plender, Griffiths, and Co.; and secretary, Mr. Maynard. The resolutions providing for the work of the Fund for 1909, which were approved at the meeting of the President and general council held at Marlborough House on Dec. 14th, 1908, were formally adopted.

CHELSEA HOSPITAL FOR WOMEN.—The annual entertainment for the patients and nurses organised by the ladies' committee and held on Saturday last brought to a close the usual Christmas festivities which are held at the hospital. The wards were very prettily decorated and a numerous company of visitors were present. Tea was followed by an excellent conjuring entertainment by Mr. Beaufort, which a large number of the patients were able to enjoy. A Christmas-tree, the gift of Mr. and Mrs. Hugh Fenton, was the source of a present to all the patients and nurses.

HOSPITALS AND THE COÖPERATIVE CONGRESS.—On Tuesday, Jan. 12th, a deputation from the Coöperative Congress, composed of Mr. T. J. Allen (Blaina), chairman of the Congress; Mr. J. C. Gray, J.P. (Manchester), secretary of the Coöperative Union; Mr. J. H. James (Cardiff), secretary of the Congress; and Mr. J. Cowling (Newport), treasurer to the Congress and President of the local society, waited upon the directors of the Newport and Monmouthshire Hospital and formally presented to them three dozen bedtables for the use of the patients. Attached to each bedtable was a small brass plate with the following words inscribed:—"Blandford Memorial. Presented by the Coöperative Congress at Newport (Mon.) on June 8th, 9th, and 10th, 1908, in memory of a fellow worker." This gift was made out of a fund called "The Blandford Memorial Fund," to which each delegate to the Congress subscribed 1*s*. The 1908 Congress was held in Newport (Mon.), and as part of this fund is devoted to charitable purposes the Newport and Monmouthshire Hospital benefited. A scholarship is also maintained out of the above fund. This congress meets yearly and the charities in the district where it meets benefit. The 1909 Congress will be held in Newcastle.

UNIVERSITY OF EDINBURGH.—The annual report of the University of Edinburgh for 1908 records that of the 3328 matriculated students of the University, of whom 595 were women, 1490, including 59 women, were enrolled in the Faculty of Medicine. Of these students 667 were Scottish, 281 were English or Welsh, 132 were Irish, 76 came from India, 306 from British colonies, and 28 from foreign countries. The number of colonial medical students exceeds by 34 the highest number reached during the last 20 years. Of the year's graduates four received the degree of M.B., C.M., 184 (including 19 women) that of M.B., Ch.B., and 76 (including three women) that of M.D. University Fellowships, scholarships, bursaries, and prizes to the value of £3730 were awarded in the Faculty. In June Mr. F. M. Caird was appointed Regius Professor of Surgery in place of the late Professor Annandale, and Dr. James Walker has been elected to the chair of chemistry (from the like post at Dundee) in place of Professor A. Crum Brown who has resigned. A lectureship has been instituted in the history of medicine, Dr. J. D. Comrie being appointed to the post. Dr. G. M. Robertson has been appointed joint lecturer with Dr. T. S. Clouston in mental diseases. Mr. J. M. Cotterill and Dr. J. W. B. Hodsdon have been appointed lecturers in clinical surgery. Dr. H. Pringle and Dr. W. A. Jolly have succeeded to the lectureships in histology and experimental physiology respectively. Dr. G. Melville has been appointed lecturer on diseases of children, Major D. S. Marshall, I.M.S., lecturer on diseases of tropical climates, and Dr. J. O. Affleck lecturer on infective fevers. Several important changes have been made in connexion with the new regulations for graduation in medicine and surgery which were passed in 1907. The classes in the Faculty of Medicine now open at the beginning of October, instead of, as formerly, about the middle of that month; degree examinations in all the subjects now take place in December. Accommodation was again given by the University authorities in September for a successful scheme of post-graduate courses in medicine, held under the joint auspices of the University and the Royal Colleges of Physicians and Surgeons.

Miss Barbara Tchaykovosky, M.D. Lond., has been awarded the London University medal in State Medicine.

THE CONOLLY NORMAN MEMORIAL.—The secretaries of the Conolly Norman Memorial Committee desire to remind intending subscribers that the list will be closed on Jan. 31st. Subscriptions will be received by Dr. W. R. Dawson, Farnham House, Finglas, Co. Dublin, or Mr. J. R. O'Connell, 34, Kildare-street, Dublin, treasurers.

THE SCHOOL FOR MOTHERS, ST. PANCRAS.—The special matinée of *Charles I.* in aid of the School for Mothers, St. Pancras, to be given by Mr. H. B. Irving and Miss Dorothea Baird and company, under the patronage of H.R.H. the Princess of Wales, will take place on Thursday, Feb. 11th, at the Shaftesbury Theatre.

MIDWIVES ACT COMMITTEE.—The Lord President of the Council has appointed Francis E. Fremantle, M.B. Oxon., F.R.C.S. Eng., M.R.C.P. Lond., medical officer of health of the county of Hertford, to be a member of the committee appointed to consider the working of the Midwives Act, 1902.

DONATIONS AND BEQUESTS.—The late Dr. William Paterson of Inverurie, Aberdeenshire, has bequeathed £100 to the Royal Infirmary, £100 to the Sick Children's Hospital, £100 to the Hospital for Incurables, and £200 to the Blind Asylum, all in Aberdeen.—Sir Robert Harvey has given £1000 to endow a bed in the Royal Cornwall Infirmary, Truro. This is the third bed which he has endowed in the institution.

TEN YEARS' EXPERIENCE OF ANTITOXIN IN BOSNIA AND HERZEGOVINA.—From recent reports presented by the Provincial Government of Bosnia and Herzegovina to the Ministry of Finance in Vienna we learn that during the ten years period 1898 to 1907 inclusive 10,051 cases of diphtheria were notified, of which 2646, or 26·3 per cent., terminated fatally. Of the total notified cases 5699 were treated by antitoxin, and of these 645, or 11·3 per cent., died, while in 4348 cases not treated by antitoxin there were 2001 deaths—a case mortality of no less than 46·0 per cent. In addition to the 5699 cases treated curatively other 16,343 were treated prophylactically with antitoxin in households invaded by diphtheria, and of these 68 persons subsequently were attacked by the disease, 24 of the cases proving fatal. In the two classes thus treated curatively and prophylactically, numbering together 22,042, only 17 instances of abnormal after-effects were noted, none of which, however, had a fatal termination. These after-effects comprised 5 cases of urticaria, 2 of erythema, and 1 of roseola; 2 were instances of local inflammation at the site of the injection and 4 of abscess; 1 had a painful knee-joint, 1 had pain in the leg and swelling of the foot, and 1 had albuminuria.

THE UNITED STATES PHARMACOPŒIA AS A LEGAL STANDARD.—The chief of the Bureau of Chemistry of the United States Department of Agriculture, Dr. H. W. Wiley, commenting on the United States Pharmacopœia which the Congress officially recognised as the standard in the passage of the Foods and Drug Act, June 30th, 1906, states that soon after its enactment the standards and methods of the Pharmacopœia were very critically examined and tested by all affected. The result was that defects, inconsistencies, and unreasonable and improper standards were found in abundance. Numerous changes were insisted upon and great pressure was brought to bear upon the Committee of Revision by correspondence and personal interviews, but while some desirable changes were made in some cases the standard was materially lowered, and in other cases the tests were modified so as to render them inefficient. For

example, it has been found that the modified test for detecting gurjun balsam in balsam of copaiba is so inexact as to permit the adulteration of the latter with at least 35 per cent. of the former without the possibility of detection. Dr. Wiley adds that the *personnel* of the pharmacopœial committee of revision is such that their final acceptance and fixing of a standard for any drug product should be final; any other construction placed on this authority would lead to endless confusion. It should be stated that the United States Pharmacopœia is controlled by a board of trustees and that the United States Pharmacopœial Convention has a Charter from the Government; its officers are permanently charged with the duty of revising and issuing the Pharmacopœia; 26 members constitute the committee of revision.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALLISON, T. M., M.D. Durh., has been appointed Honorary Assistant Physician to the Royal Victoria Infirmary, Newcastle-on-Tyne.

BENDLE, JAMES HUXTABLE, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed an Assistant Medical Inspector of Schools by the Somerset County Council.

BIGGS, GEORGE NIXON, M.B., B.S. Durh., has been appointed Aural Surgeon to the Evelina Hospital for Sick Children.

BROWN, W. BRODIE, M.D., C.M. Aberd., has been appointed Medical Officer and Public Vaccinator for the Parish of Lumphanan.

CORBETT, WILLIAM EDWARD MANDERSON, L.R.C.P. & S. Irel., has been appointed Medical Inspector of Schools for Stonehouse by the Devon Education Committee.

FREMANTLE, F. E., M.B. Oxon., D.P.H. Eng., has been appointed to the Edward Jenner Lectureship on Public Health at St. George's Hospital Medical School.

HOWARD, RUSSELL, M.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to the Poplar Hospital.

LUKE, THOMAS D., M.D., F.R.C.S. Edin., has been appointed Physician and Medical Superintendent to the Peebles Hydropathic, Peebles, N.B.

MARNAN, JOHN, M.B., B.Ch., B.A.O. Dub., has been appointed Medical Officer at the Gloucester County Asylum.

SANDFORD, GEORGE CALROW, M.D., C.M. Edin., has been appointed Public Vaccinator for Devonport.

TCHAYKOVSKY, BARBARA, M.D. Lond., has been appointed Assistant School Medical Officer by the London County Council.

WRAY, G. G., M.B., Ch.B. Edin., has been appointed House Surgeon to the General Hospital, Loughborough.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—House Physician. Also House Surgeon, both for six months. Salary at rate of £20 per annum, with board and lodging.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £170 per annum, and rooms, fire, lights, and attendance.

BLACKBURN EPILEPTIC COLONY, Langho.—Medical Superintendent. Salary £250 per annum, with residence, washing, &c.

BOLTON UNION WORKHOUSE HOSPITALS.—Resident Assistant Medical Officer. Salary £170 per annum, with apartments, light, washing, and attendance.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried. Salary at rate of £80 per annum, with board, lodging, and washing.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Pathologist. Salary £350 per annum.

BRISTOL GENERAL HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, &c.

BRISTOL ROYAL INFIRMARY.—Two House Physicians, One House Surgeon, One Obstetric and Ophthalmic House Surgeon, and One Throat and Nose and Ear House Surgeon. Salary of two former £100 per annum, and of two latter £75 per annum. Also One Casualty Officer. Salary £50 per annum. With apartments, board, and laundry in each case.

BRITISH LYING-IN HOSPITAL, Endell-street, W.C.—Resident Medical Officer. Salary at rate of £50 per annum, with board, lodging, and washing.

BROOKWOOD, NEAR WOKING, SURREY COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £200, with board, lodging, and laundry.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Physician. Also Assistant House Surgeon. Salary of former at rate of £65 per annum, and of latter at rate of £50 per annum, with board, residence, and laundry in each case.

CANCER HOSPITAL, Fulham-road, London, S.W.—Three Clinical Assistants.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Pathologist. Salary £40 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate £50 per annum, with board, washing, and residence.

COVENTRY, CITY OF, EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £250 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—House Surgeon. Salary at rate of £60 per annum, with board, residence, and washing.

HALIFAX, ROYAL INFIRMARY.—Second House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing.

HAMPSTEAD GENERAL HOSPITAL.—Honorary Radiographer.

HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Salary £25. Also Dental Surgeon. Salary 50 guineas per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence.

LEEDS EDUCATION COMMITTEE.—Medical Inspectors of School Children.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—Two House Surgeons. Salary at rate of £50 per annum, with board, &c.

LIVERPOOL PORT SANITARY AUTHORITY.—Assistant Medical Officer. Salary £250 per annum.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with residence and board.

LONDON TEMPERANCE HOSPITAL.—Pathologist and Bacteriologist.

MANCHESTER, MONSALL FEVER HOSPITAL.—Senior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

MID-LOTHIAN AND PEEBLES ASYLUM, Rosslynlee.—Assistant Medical Officer.

NEW HOSPITAL FOR WOMEN, Euston-road.—Senior Assistant (female). Also Three Clinical Assistants.

OLDHAM INFIRMARY.—Ophthalmic Surgeon. Salary 50 guineas per annum.

ROSS-SHIRE, PARISH COUNCIL OF KINCARDINE.—Resident Medical Officer and Vaccinator. Salary £105 per annum, with fees.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £110 per annum, with rooms, commons, and washing.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Clinical Assistants.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Dental Surgeon.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, &c., 73, Welbeck-street, W.—Resident House Physician for six months. Salary at rate of £100 per annum, with residence, board, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Ophthalmic Surgeon. Also Pathologist.

WINCHESTER, CITY OF.—Medical Officer of Health. Salary £400 per annum.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Lavenham, in the county of Suffolk; and at Sandwich, in the county of Kent.

Births, Marriages, and Deaths.

BIRTHS.

IRWIN.—On Jan. 9th, at "Simla," Kildare, Ireland, the wife of Captain A. W. A. Irwin, R.A.M.C., of a son.

STOCK.—On Jan. 5th, at Montrose House, Clifton, Bristol, the wife of Stuart Vernon Stock, F.R.C.S., of a daughter.

MARRIAGES.

GAMLEN—RADCLIFF.—On Jan. 7th, at the parish church, Booterstown, Robert L. Gamlen, M.B., B.C., Indian Medical Service, to Daisy, youngest daughter of the late Arthur Radcliff of Hurdlestown, Kells, county Meath.

O'REILLY—THOMAS.—On Jan. 6th, at St. James's Church, West End, Hants, Captain Patrick Stanislaus O'Reilly, R.A.M.C., to Clara Lucy Elizabeth, younger daughter of John Lewis Thomas, M.D., J.P., of Harefield, Bitterne, Hants.

SPRAGUE—PETTER.—On Jan. 13th, at the parish church, Ilfracombe, by the Rev. James Richards, M.A., Minor Canon, Gloucester Cathedral (brother-in-law of the bridegroom), assisted by the Rev. Douglass Hodgson, B. A., Francis Henry Sprague, of The Lawn, Brunswick-road, Gloucester, only son of Francis S. Sprague, The Square, Barnstaple, to Hilda Salome, third daughter of Charles H. Petter, Elmcote, Ilfracombe.

DEATHS.

CLAREMONT.—On Dec. 31st, 1908, at "Petersleigh," Southsea, the residence of her son, Dr. Claude C. Claremont, Emma, widow of the late Claude Clarke Claremont, M.R.C.S., L.S.A., of Millbrook House, London, N.W., and of Aldwick-road, Bognor.

HARLAND.—On Jan. 9th, in his 37th year, William Henry Harland, M.R.C.S., L.R.C.P., late Civil Surgeon, 17th Lancers, Boer War.

KILLBY.—On Jan. 9th, at Highbury New Park, Thomas A. Killby, M.R.C.S., L.R.C.P., aged 28 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

JURY AND MEDICAL MEN—A WELCOME VARIANT.

ALL too often are kindly acts performed by members of the medical profession overlooked—taken, in fact, in quite a matter-of-course fashion. Instances are frequently occurring in the coroners' courts where medical men have gone out of their way to aid and to relieve the sufferers and then, when all the evidence has been adduced, the juries simply return their verdicts without in any way acknowledging the kindness of the medical men. Fortunately, there are exceptions to this rule. At Brighton, for instance, a few days ago, an inquest was held upon the body of a widow who, living alone on a small allowance, died from self-neglect and drinking habits. Some days before her death she called on Mr. H. H. E. Scatliff who found her mouth in a gangrenous state brought on by dirt and drink. He advised her to go to the Sussex County Hospital. She did on one occasion but neglected to go again. Mr. Scatliff next received a summons to attend the woman at her cottage. He again advised her to go to the hospital but she refused. He sent her medicine and, in view of the filthy condition of the cottage, he notified the sanitary authorities and requested them to remove the woman to the infirmary. Before this request could be acted upon the woman died, death being accelerated by cold and want of food. The jury at the inquest warmly acknowledged Mr. Scatliff's kindness after the woman had deliberately disregarded his advice. They appreciated the services of the medical practitioner in a difficult case and gave honour where honour was due.

THE INFECTIVITY OF GONORRHŒA.

To the Editor of THE LANCET.

SIR,—Your correspondent "Gonococcus" has not very clearly stated his case. Presumably the "friend" (he says from man to woman) had a gonorrhœa in the incubation stage and infected the woman two or three days before the disease broke out in himself. I have seen a few undoubted examples of this occurrence. "Gonococcus" must here be sure of his ground as it is equally possible for the reverse to happen and the woman to infect the man while in the incubation stage. That the husband did not contract the disease after two separate connexions is not unusual, as one frequently sees examples of two or three individuals going with the same woman and only one contracting the disease. If "Gonococcus" will refer to a paper of mine in the *Clinical Journal* of June 24th, 1908, on the treatment of early gonorrhœa in the male, he will probably find some useful hints with regard to some of the vagaries of the gonococcus.

I am, Sir, yours faithfully,

W. WYNDHAM POWELL, F.R.C.S. Eng.

Cavendish-place, W., Jan. 9th, 1909.

KISSING THE BOOK.

ANOTHER strong and cogent protest against the prevalent manner of taking the oath in English law courts was raised in the *Times* on Jan. 2nd, when a well-known operatic impresario wrote to describe the experience resulting therefrom to a *prima donna* under engagement to him. This lady was subpœnaed as a witness and was given a dirty and ill-smelling Testament to kiss. Some days later, and *propter hoc*, in her medical attendant's opinion, she developed a scabious rash on her mouth and chin which persisted for two months, during which time she lost a considerable sum through enforced idleness. We have objected to this insanitary practice again and again and we hope that this instance may become so widely known that a majority of witnesses will demand to be sworn in the Scottish form, as is within everybody's right. Such a general protest might well result in the official substitution of a dignified and unobjectionable declaration for a perfunctory ritual which, as this case proves, may be fraught with more than unpleasant consequences. If the lawyers refuse to banish the Testament from the courts those who prefer to be sworn on it might well, as the *Times'* correspondent points out, lay their hands upon an open page according to the old English and present Continental use. Whatever form is adopted it is high time that an end should be put to the practice of kissing the Book, which, like many other established customs, has nothing whatever to recommend it. We offer our warm congratulations to the Right Hon. Sir Gorell Barnes, who, sitting in the Probate, Divorce, and Admiralty Division on Tuesday last, called attention to the statutory methods of taking the oath, and said: "I have given instructions that both in this court and in the court in which Mr. Justice Bargrave Deane presides the officer administering the oath shall ask the witnesses if they desire to be sworn in the Scotch form, and, if so, they shall take the oath in Scotch form."

AN EIGHTH OF AN ACRE AND A GOAT.

To the Editor of THE LANCET.

SIR,—The annotation in your issue of Jan. 9th on the housing question influences me to make the following suggestions on this important subject:—

1. By legislation let us declare that "free trade" (real free trade) shall obtain in agricultural land—i.e., that any agricultural land required anywhere for public or military purposes shall be purchasable at agricultural value, plus 10 per cent., with full compensation to the tenant. The public body buying it to provide roads, water, &c., and be compelled to let or sell (at 5 per cent. above cost price to any one individual) sites of not less than an eighth and not more than one acre of land. There would be no injustice to the owner, as he could reinvest his money in public stocks where it would bring in more revenue than from the original agricultural land, whilst the gain to the State would be enormous.

2. No more than one cottage should be erected on any site of less than one-eighth of an acre, and if a minimum wage and the number of bricks could be fixed, and every workman be paid for and allowed free trade in laying as many as he liked above the standard, the cost of building cottages would be a normal and proper one. Failing this, a concrete cottage, red-roofed, and rough casted, erected by unskilled labour, would be the best, cheapest, and most sanitary.

3. Given the first condition only, a workman could have an eighth of an acre, a cottage, and a goat for 5*s.* a week. He and his family would also have sunlight, fresh air, a garden and vegetables, and phthisis would cease to trouble the land. Earth closets would, of course, take the place of our present costly and wasteful system. But till the land is free for public purposes there is no hope of cheap and healthy homes.

4. The tramways would have to be extended, but the cheaper rents would fully allow for the additional cost of getting to work. Of course, the slum dweller would cling to his slum, but by relieving the congestion his lot also would be ameliorated and his rents fall to a proper level. But the first man to cater for is the thrifty and sober citizen, and through him to render help to others.

I am, Sir, yours faithfully,

Newcastle-on-Tyne, Jan. 9th, 1909. T. M. ALLISON, M.D. Durh.

QUACK MEDICINES AND THE GOVERNMENT STAMP.

IN a recent number of the *Pharmaceutical Journal* Dr. J. Macdonald Brown, in an interesting paper on Medicines, Past, Present, and Future, refers to the evil of the Government patent medicine stamp, which has frequently been dealt with in THE LANCET. He points out that to unthinking and illiterate persons the stamp implies a Government guarantee that the package of medicine possesses the efficacy claimed for it, whereas in fact it is a questionable method of swelling the national exchequer. The recent action of the United States Government in this connexion is of particular interest. By the Food and Drugs Act of 1906 permission was given to dealers in foods and drugs to insert on their labels the phrase "Guaranteed under the Food and Drugs Act, June 30th, 1906." As a result unscrupulous traders advertised to the effect that their goods were sold under a Government guarantee, thereby implying that the Government guaranteed that the quality of the goods was in accordance with the label and in conformity with the law. Action was first taken by the Commissioner of Patents who refused to register as a trade-mark any design into which the guarantee entered. The matter was then taken up by the Department of Agriculture, with the result that an official decision has just been announced that in future the guarantor must explicitly acknowledge his personal responsibility in giving the guarantee in the following form: "Guaranteed by (trader's name) under the Food and Drugs Act, June 30th, 1906." This action on the part of the Government of the United States in repudiating the implied Government guarantee and taking steps to prevent the perpetuation of an unwarranted implication provides a powerful argument with which to approach the Chancellor of the Exchequer in agitating for the abolition of the patent medicine stamp in the United Kingdom.

OPSONINS.

To the Editor of THE LANCET.

SIR,—In these days when the word "opsonin" is becoming more familiar to our ears, and when possibly some lingering vagueness of what the idea of opsonin treatment means may yet exist in some minds, any link which may help the sequence of thought may prove an aid to the meaning of the word. Mr. Owen's criticism of the opsonin treatment as a "bacillary relish" helps much, I think, by the homeliness of the phrase. Let me humbly add to it by a quotation from "Prout's Reliques": "The kindred study of gastronomy has derived the hint of a new combination from its inspiring ray; and, after a rapid perusal of Prout's Apology for Fish, the celebrated Monsieur Ude, whom Croquis has so exquisitely delineated in the gallery of Regina, has invented on the spot an original sauce, a novel *obsonium*, more especially adapted to cod and turbot, to which he has given the revered father's name; so that Sir William Curtis will be found eating his 'turbot à la Prout' as constantly as his 'cotelette à la Maintenon.'" And so Sir Polymorphonuclear Leucocyte may be found eating his T.B. à la Wright or the other organisms that may be on the menu.

I am, Sir, yours faithfully,

Keighley, Jan. 5th, 1909. JOHN J. HANLEY, L.R.C.P. Lond., &c.

THE TESTING OF PHARMACEUTICAL PREPARATIONS.

Messrs. Meister, Lucius, and Brüning, Limited, of Hoechst-on-Main, and of 51, St. Mary Axe, London, E.C., have recently issued a valuable publication in which are outlined the methods of identification, tests, therapeutic indications, and dosage of what may be called the newer remedies. To give a few examples mention may be made of the organic arsenic and silver preparations (arsacetin, albargin), acetyl-salicylic acid, novocain, orthoform, benzosol, hypnal, lactophenin, pegnin, sabromin, and sajodin. Included amongst these is synthetic suprarenin described as the active adrenal principle

reconstructed by chemical synthesis. It is said to be identical as regards its physiological action with suprarenin prepared from the adrenal glands, and owing to its chemical purity gives more consistent results. There is an equally valuable chapter also on serotherapeutical and bacterial preparations. The book contains just that information on recent pharmacological preparations which otherwise can only be found with some difficulty in the scattered pages of more or less current literature. In many cases the information is quite new and has not so far come through the usual channels to the edification of the medical practitioner, dispenser, or pharmacist.

H. T. E.—We make it a rule not to give medical advice. Our correspondent should consult his usual medical attendant who will be able to advise him and who will suggest a consultant if our correspondent so wishes.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—Leonard S. Dudgeon, O. Grünbaum): at 8.30 P.M.

Papers:

Dr. Rondoni (introduced by Dr. Mott): Some Hereditary Syphilitic Affections of the Central Nervous System.

Mr. Shattock: Complete Saponaceous Calcification of a Large Cutaneous Adenoma.

Sir Thomas Oliver and Mr. Gibson: The Changes in the Cells in the Cerebral Cortex and in the Anterior Horn in a Rabbit Poisoned with Phosphorus.

Dr. Parkes Weber: Disseminated Lobular Necrosis of the Liver with Jaundice and a Case of Acute Hepatic Atrophy in Secondary Syphilis.

Mr. C. E. Walker and Mr. George Debaisieux: On the Behaviour of the Nucleoli in the Cells of Malignant Growths.

Dr. Box: Idiopathic Dilatation of the Ureter.

Card Specimen:

Mr. Shattock: Sections of the Aorta showing Calcification of the Media in a Mummy.

WEDNESDAY.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Llewelyn Powell, R. W. Cellum): at 8.30 P.M.

Special General Meeting:

To Consider the Advisability of Legislation to Control the Administration of Anæsthetics.

The proposed Bill, which is given in full in the *British Medical Journal*, Dec. 5th, 1908, Supplement p. 302, will be taken as the basis of the Discussion.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—Arthur Whitfield, E. G. Graham Little): at 4 P.M.

Annual General Meeting.

Clinical Case:

Dr. Pernet: A Case of Granuloma Annulare (shown at a previous meeting).

(And other Cases not yet notified.)

NEUROLOGICAL SECTION (Hon. Secretaries—Leonard G. Guthrie, E. Farquhar Buzzard): at 8.30 P.M.

Short Papers:

Dr. A. E. Russell and Mr. P. W. G. Sargent: Apoplectiform Cerebral Hæmorrhage; Operation; Evacuation of Blood; Recovery.

Dr. Henry Head: A Case of Fractured Spine illustrating Various Forms of Sensory Loss.

Dr. S. A. K. Wilson: A Case of Thrombosis of the Left Posterior Inferior Cerebellar Artery.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—Hugh Lett, E. I. Spriggs, Harold J. Stiles): at 5 P.M.

Cases:

Dr. T. R. Whipham: (1) A Case of (?) Lymphadenoma; (2) A Case of Congenital Cystic Disease of the Kidneys.

Paper:

Dr. David Forsyth: Infant Mortality as seen in a Children's Hospital—being an Analysis of 1202 Consecutive Infant Deaths under One Year at the Evelina Hospital for Sick Children.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Paper:

Dr. Hamer: Some Bacteriological Problems considered from an Epidemiological Point of View.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

CHELSEA CLINICAL SOCIETY, Chelsea Dispensary, Manor-street, Chelsea, S.W.

TUESDAY.—8.30 P.M., Cases will be exhibited by Mr. C. English and Dr. S. Taylor. Mr. H. Evans will report on the Case of Tumour of Jaw shown at the last meeting. 9 P.M., Dr. E. Pritchard: Some Practical Points in the Treatment of Indigestion in Infants.

MEDICO-LEGAL SOCIETY, 22, Albemarle-street, W.

TUESDAY.—8.15 P.M., Exhibition of Specimens and Narration of Case.—Mr. L. C. S. Broughton: Industrial Life Insurance.—Mr. A. S. Morley: Some Experiences of the Difficulties and Abuses of the Workmen's Compensation Acts.

ROYAL STATISTICAL SOCIETY, 9, Adelphi-terrace, Strand, W.C.

TUESDAY.—5 P.M., Mr. P. E. Braun: The Cost, Conditions, and Results of Hospital Relief in London (Howard Medal Prize Essay).

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—5 P.M., Dr. Buckley (Buxton): Intestinal Lavage on the Plombières System.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Right Hon. Lord Avebury: On Seeds, with Special Reference to British Plants (Presidential Address). Exhibition of Foraminifera dredged from off the Coast of Somaliland.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—12 (noon), Prof. Shattock: Myxoma and Chondroma. (Museum Demonstration.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Low: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Armour: Clinical (with cases).

WEDNESDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Clinical Lecture:—Dr. Davis: Diseases of the Throat, Nose, and Ear.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. R. H. Cole: General Paralysis.

SATURDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson); X Rays. 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical Out-patient (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture-Demonstration:—Dr. A. J. Whiting: Aortic Valvular Disease.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. H. W. Carson); X Rays. 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. H. W. Carson: The After-results of Gastro-enterostomy.

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations (Mr. W. Edmunds). Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. Lawrence: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., First Clinique (Skin).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—Sir William Gowers: Myopathy and Syringomyelia.
FRIDAY.—Dr. Turner: Epilepsy.

UNIVERSITY OF LONDON, Theatre of the Royal College of Surgeons, Lincoln's Inn Fields, W.C.

THURSDAY.—5 P.M., Dr. A. Keith: The Anatomy and Zoological Relationships of the Anthropoid Apes:—Lecture II.: The Distribution, Anatomy, and Relationships of the Orang.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Paratuberculides (due to Tuberculous Toxins): I., Macular; II., Papular; III., Pustular; IV., Pigmentary.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.).

THURSDAY (21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospital operations are performed daily.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1908, which was completed with the issue of Dec. 26th, were given in THE LANCET of Jan. 2nd, 1909.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 14th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 8	29·84	N.W.	0·10	59	42	38	37	38	Fine
,, 9	30·21	N.	...	57	42	37	35	37	Fine
,, 10	29·97	S.W.	0·04	52	48	37	41	41	Overcast
,, 11	29·62	S.W.	0·15	65	51	41	48	48	Overcast
,, 12	29·66	W.	...	68	45	42	40	42	Fine
,, 13	29·57	E.	0·01	47	47	38	38	40	Raining
,, 14	29·40	W.	0·01	64	47	39	39	42	Cloudy

During the week marked copies of the following newspapers have been received:—*Birmingham Daily Post, Lincoln Leader, South Wales Daily News, Manchester Evening News, Birmingham Evening Dispatch, Daily Chronicle, Eastern Morning News, Grimsby Telegraph, Pall Mall Gazette, Nottingham Evening Post, Blackpool Gazette, Liverpool Post and Mercury, Wimbledon Gazette, Scientific American, &c.*

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